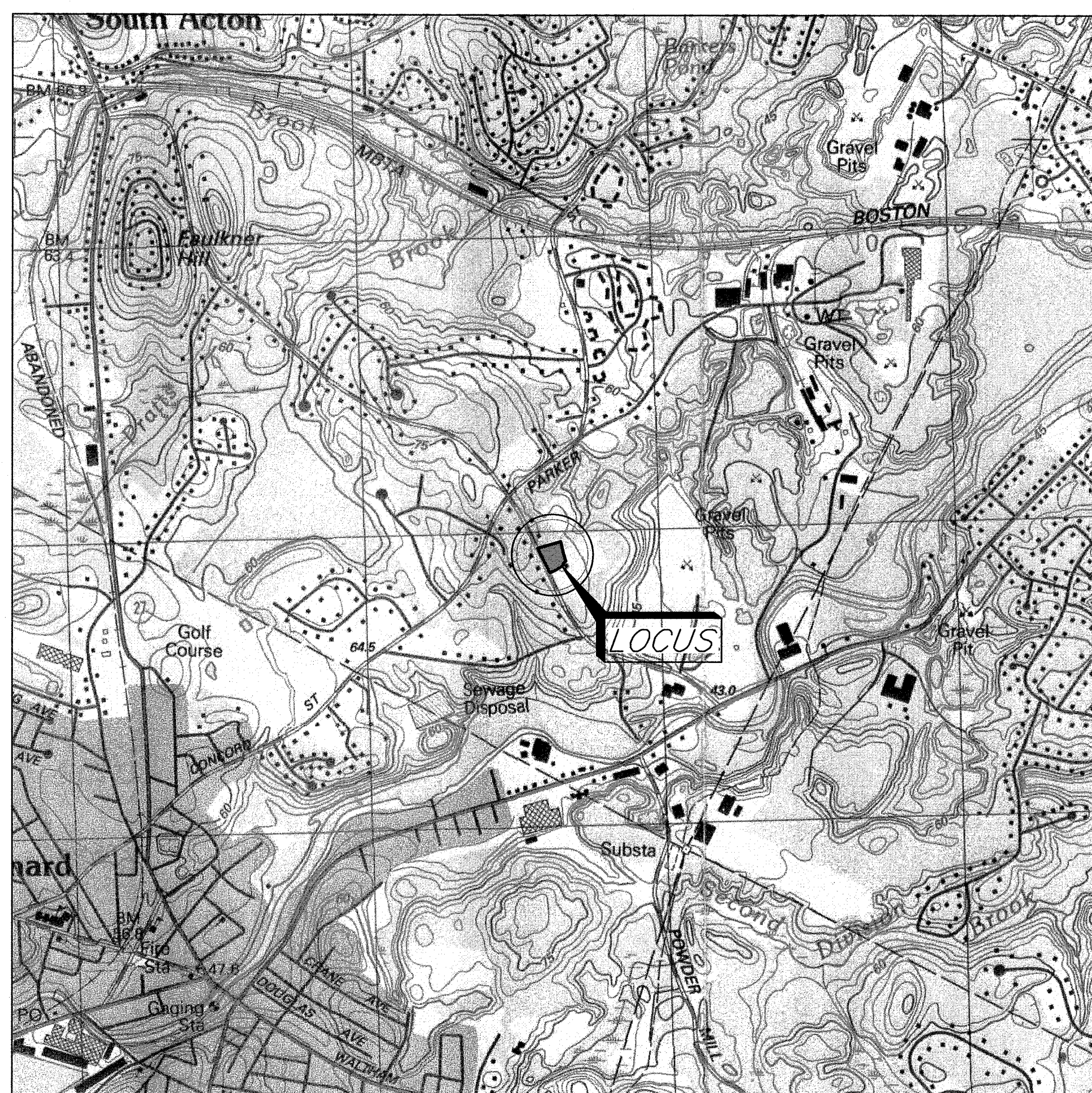


COMPREHENSIVE PERMIT PLAN SET
248 HIGH STREET
ACTON, MASSACHUSETTS
"ADELINE WAY"
ASSESSOR MAP J3 - PARCEL 7
PREPARED FOR
248 HIGH STREET, LLC

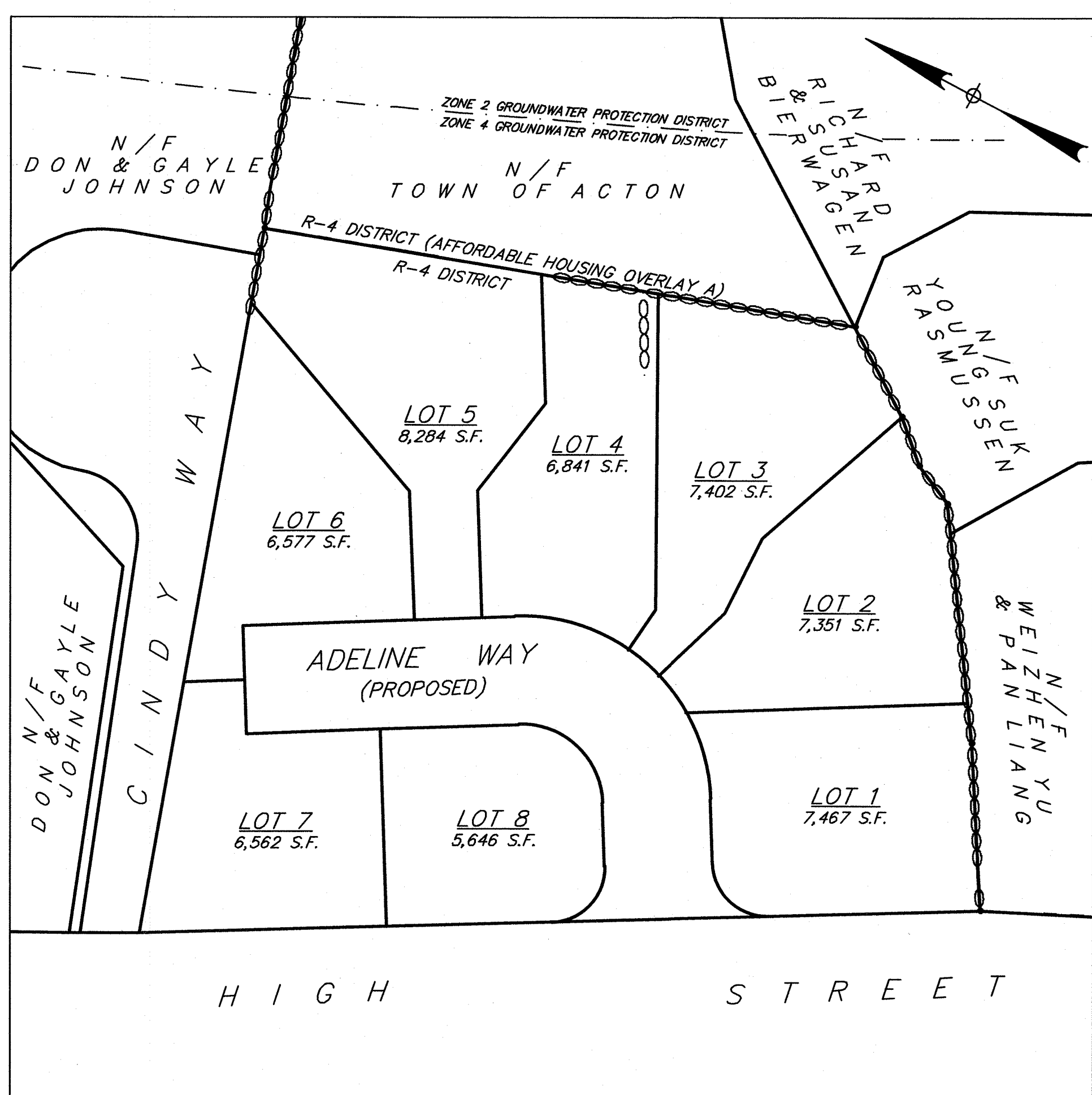
OWNER/APPLICANT:
248 HIGH STREET, LLC
159-1 PROSPECT STREET
ACTON, MA 01720

DEED RECORDED AT MIDDLESEX SOUTH
REGISTRY BOOK 66792 PAGE 231

CIVIL ENGINEERS & SURVEYORS
DAVID E. ROSS ASSOCIATES, INC.
111 FITCHBURG ROAD
P.O. BOX 368
AYER, MA 01432



USGS LOCUS MAP
SCALE: 1"=1200'



KEY PLAN
SCALE: 1"=40'

SHEET INDEX

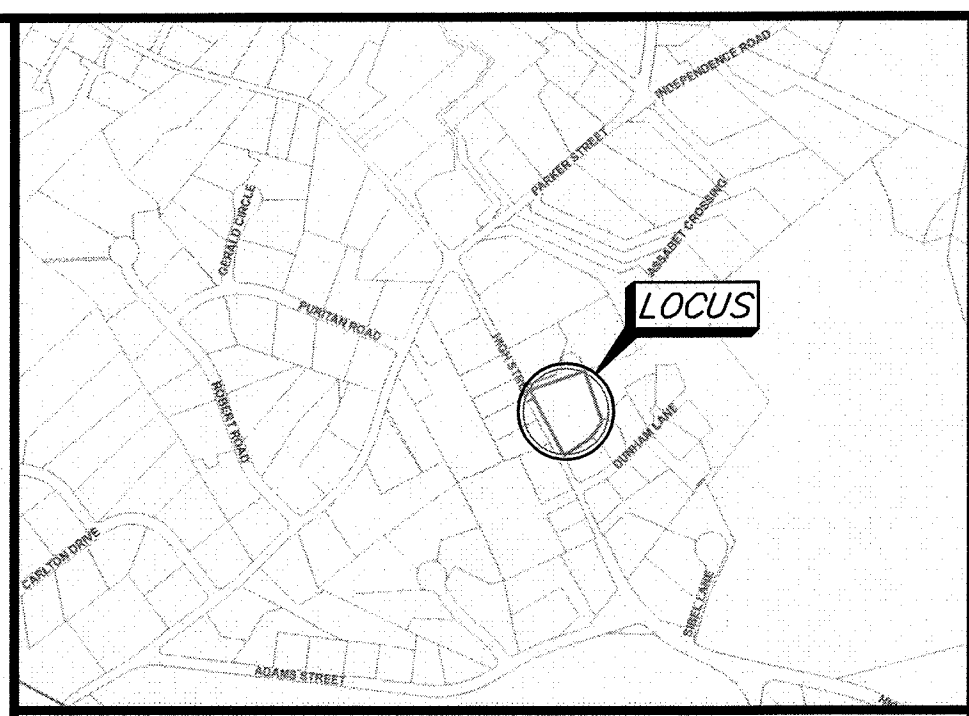
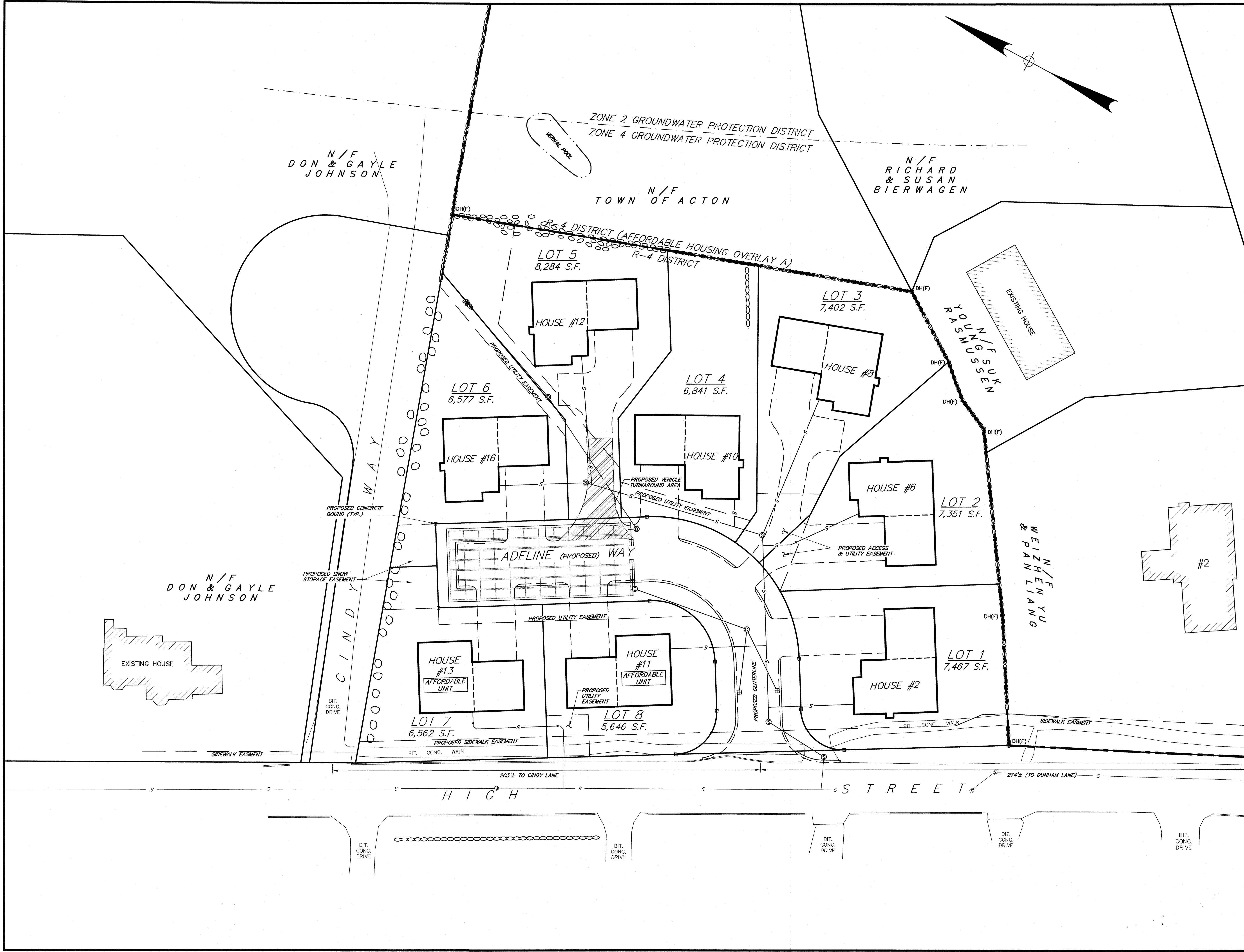
SHEET 1 - TITLE SHEET
SHEET 2 - MASTER PLAN
SHEET 3 - PLAN OF LAND
SHEET 4 - NATURAL FEATURES & EXISTING CONDITIONS PLAN
SHEET 5 - SITE DEVELOPMENT PLAN
SHEET 6 - PLAN & PROFILE
SHEET 7 - CONSTRUCTION DETAILS PLAN
SHEET 8 - LANDSCAPE PLAN
SHEET 9 - EROSION & SEDIMENTATION CONTROL PLAN

PLAN # L-12984
PROJECT #31342
JUNE, 2016

ACTON ZONING BOARD OF APPEALS	
DATE OF APPROVAL:	
DATE OF ENDORSEMENT:	
APPROVAL UNDER M.G.L. CH. 40B, SEC. 20-23	

DANIEL B. WOLFE
No. 36523
CIVIL
REGISTERED PROFESSIONAL ENGINEER
7-20-16

REVISIONS	
6-7-16	ORIGINAL ENDORSEMENT
7-20-16	PER TOWN REVIEW COMMENTS



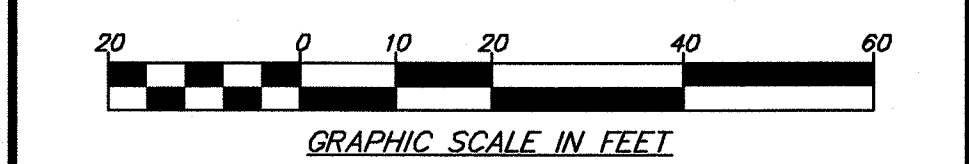
ZONING REQUIREMENTS		
R-4 ZONING DISTRICT		
DESCRIPTION	REQUIRED	MIN. PROPOSED
MIN. LOT AREA	40,000 S.F.	5,646 S.F.
MIN. LOT FRONTAGE	175'	14.88'
MIN. LOT WIDTH	50'	14.85'
MIN. FRONT SETBACK	45'	8'
MIN. SIDE SETBACK	20'	5'
MIN. REAR SETBACK	20'	10'
MAX. BUILDING HEIGHT	36'	33'±

PROPOSED SITE DATA	
DESCRIPTION	PROPOSED
TOTAL PARCEL AREA	65,201 S.F. (1.50 ACRES) EXISTING
DWELLING UNIT DENSITY	5.33 UNITS/ACRE
FLOOR AREA RATIO	0.25
BUILDING COVERAGE	12,966 S.F. (19.88%)
TOTAL COVERAGE	20,435 S.F. (31.34%)

ACTON ZONING BOARD OF APPEALS

DATE OF APPROVAL: _____
DATE OF ENDORSEMENT: _____

APPROVAL UNDER M.G.L. CH. 40B, SEC. 20-23



SURV.: MSB/CRB	CALC.: MKW	DRAFT: REO
NR: 766/95, 722Y/101	DEED: 66792-231	CHECK: DBW

REVISIONS

6-7-16	ORIGINAL ENDORSEMENT
7-20-16	PER TOWN REVIEW COMMENTS

7-20-16

SHEET TITLE: **MASTER PLAN**

DESIGNED FOR: **248 HIGH STREET, LLC**

ADDRESS: **248 HIGH STREET
ACTON, MA**

LOT NO.: 1 PL 105 OF 2016	ASSESSOR MAP: J3	ASSESSOR PARCEL: 7
------------------------------	------------------	--------------------

**DAVID E. ROSS
ASSOCIATES, INC.**

CIVIL ENGINEERS - LAND SURVEYORS
ENVIRONMENTAL CONSULTANTS

111 Fitchburg Road
P.O. Box 368
Ayer, MA, 01432-0368

978-772-6232
FAX 978-772-6258
www.davideross.com

SCALE: 1"=20'	DATE: JUNE, 2016
REF: ---	PLAN NO.: L-12984
JOB NO.: 31342	SHEET NO.: 2 of 9

NOTES:

- PROPERTY LINES SHOWN TAKEN FROM PLAN ENTITLED "PLAN OF LAND IN ACTON, MASS." PREPARED FOR 248 HIGH STREET, LLC BY GOLDSMITH, PREST, & RINGWALL, INC. DATED 1-29-16.
- TOPOGRAPHY AND SITE FEATURES SHOWN ARE BASED ON A TOPOGRAPHICAL SURVEY BY GOLDSMITH, PREST, & RINGWALL, INC. AND VERIFIED BY DAVID E. ROSS ASSOCIATES, INC.
- TOPOGRAPHIC ELEVATION DATUM IS BASED ON NAVD 88. CONVERSION FACTOR TO NAVD 1929 FROM NAVD 88 IS +0.797'.
- THE PLANS DEPICT ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON THE DATE OF TOPOGRAPHY AND THE ABSENCE OF SUBSURFACE STRUCTURES, UTILITIES, ETC. IS NOT INTENDED OR IMPLIED.
- PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A PROFESSIONAL LAND SURVEYOR TO SET TWO ADDITIONAL BENCHMARKS ON-SITE, OUTSIDE THE LIMITS OF WORK WHICH WILL NOT BE DISTURBED BY CONSTRUCTION.

LEGEND

- PROPERTY LINE
- EASEMENT
- 1+00 STREET CENTERLINE W/ STATIONING
- TBM TEMPORARY BENCHMARK
- OB/DH FOUND MONUMENT
- 210 EXISTING CONTOUR
- EXISTING TREE LINE
- EXISTING TREES
- EXISTING BUILDING
- EDGE OF PAVEMENT
- UTILITY POLE
- OHW OVERHEAD WIRES
- EXISTING DRAIN MANHOLE
- EXISTING DRAIN LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER LINE
- EXISTING WATER LINE
- EXISTING HYDRANT
- EXISTING DEEP HOLE TEST LOCATION

N/F
DON & GAYLE
JOHNSONN/F
TOWN OF ACTONN/F
RICHARD
& SUSAN
BIERWAGENR-4 DISTRICT AFFORDABLE HOUSING (OVERLAY A)
R-4 DISTRICTYOUNG
SUN
FARMN/F
WEIZHANG
& PAN LIANGN/F
DON & GAYLE
JOHNSON

OBSERVATION TEST HOLE DATA
SOIL EVALUATOR: ROBERT E. OLIVA, D.E.R.A.
4/15/16

416-1 ELEV. = 212.5'
0' - 8" A 10YR 3/3 FINE SANDY LOAM
8" - 18" Bw 10YR 5/8 LOAMY SAND
18" - 40" C1 10YR 6/8 M. SAND
40" - 124" C2 10YR 6/4 SANDY LOAM

NOTHING AT 24"
WEeping AT 36"
NO REFUSAL
E.S.H.W.T. AT 24" (215.3')

416-2 ELEV. = 218.8'
0' - 10" A 10YR 3/3 FINE SANDY LOAM
10" - 24" Bw 10YR 5/8 SANDY LOAM
24" - 42" C1 10YR 4/4 LOAMY SAND
42" - 110" C2 2.5Y 5/4 SANDY LOAM

NOTHING AT 42"
WEeping AT 64"
NO REFUSAL
E.S.H.W.T. AT 42" (215.3')

416-3 ELEV. = 218.4'
0' - 10" A 10YR 3/3 FINE SANDY LOAM
10" - 22" Bw 10YR 5/8 SANDY LOAM
22" - 32" C1 2.5Y 5/8 SANDY LOAM
32" - 110" C2 2.5Y 5/4 SANDY LOAM

NOTHING AT 32"
WEeping AT 41"
NO REFUSAL
E.S.H.W.T. AT 32" (215.7')

416-4 ELEV. = 218.1'
0' - 10" A 10YR 3/3 FINE SANDY LOAM
10" - 30" Bw 10YR 5/8 SANDY LOAM
30" - 48" C1 2.5Y 5/8 SANDY LOAM
48" - 122" C2 2.5Y 5/4 LOAMY SAND

NOTHING AT 48"
NO WEeping, NO G.W.
NO REFUSAL
E.S.H.W.T. AT 48" (214.1')

416-5 ELEV. = 222.5'
0' - 2" A 10YR 3/3 FINE SANDY LOAM
2" - 15" Bw 10YR 5/8 SANDY LOAM
15" - 52" C1 2.5Y 5/4 SANDY LOAM
52" - 118" C2 2.5Y 5/8 SANDY LOAM

NOTHING AT 52"
NO WEeping, G.W. AT 118"
NO REFUSAL
E.S.H.W.T. AT 52" (218.3')

416-6 ELEV. = 221.6'
0' - 10" A 10YR 3/3 FINE SANDY LOAM
10" - 29" Bw 10YR 5/8 SANDY LOAM
29" - 108" C 2.5Y 4/4 SANDY LOAM

NOTHING AT 48"
NO WEeping, NO G.W.
NO REFUSAL
E.S.H.W.T. AT 48" (217.2')

416-7 ELEV. = 217.8'
0' - 10" A 10YR 3/3 FINE SANDY LOAM
10" - 27" Bw 10YR 5/8 SANDY LOAM
27" - 110" C 2.5Y 5/4 SANDY LOAM

NOTHING AT 42"
WEeping AT 62"
NO REFUSAL
E.S.H.W.T. AT 42" (214.8')

416-8 ELEV. = 223.1'
0' - 6" A 10YR 3/3 FINE SANDY LOAM
6" - 18" Bw 10YR 5/8 SANDY LOAM
18" - 102" C2 FRACTURED ROCK/LEDGE

NO NOTHING OBSERVED
NO WEeping
NO REFUSAL, MACHINE STILL ABLE TO REMOVE ROCK
E.S.H.W.T. NOT DETERMINED

416-9 ELEV. = 224.8'
0' - 12" A 10YR 3/3 FINE SANDY LOAM
12" - 32" Bw 10YR 5/8 SANDY LOAM
32" - 102" C2 10YR 5/8 (SOME SOIL, DECAYED ROCK)

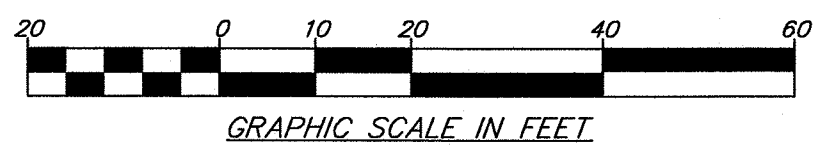
NOTHING AT 40"
NO WEeping, NO G.W.
NO REFUSAL, MACHINE STILL ABLE TO REMOVE ROCK
E.S.H.W.T. NOT DETERMINED

ACTON ZONING BOARD OF APPEALS

DATE OF APPROVAL:

DATE OF ENDORSEMENT:

APPROVAL UNDER M.G.L. CH. 40B, SEC. 20-23



SURV.	MSB/CRB	CALC.	MKW	DRAFT	RED
NR	766/95, 722Y/101	DEED	66792-231	CHECK	DBW

REVISIONS

NO.	DATE	REVISION
6-7-16		ORIGINAL ENDORSEMENT
7-20-16		PER TOWN REVIEW COMMENTS

DANIEL B. WOLFE
No. 36523
CIVIL
REGISTERED PROFESSIONAL ENGINEER
7-20-16

SHEET TITLE:
NATURAL FEATURES &
EXISTING CONDITIONS PLANDESIGNED FOR:
248 HIGH STREET, LLCADDRESS:
248 HIGH STREET
ACTON, MA

LOT NO.:	ASSESSOR MAP:	ASSESSOR PARCEL:
1 PL 105 OF 2016	J3	7

DAVID E. ROSS
ASSOCIATES, INC.CIVIL ENGINEERS - LAND SURVEYORS
ENVIRONMENTAL CONSULTANTS111 Fitchburg Road
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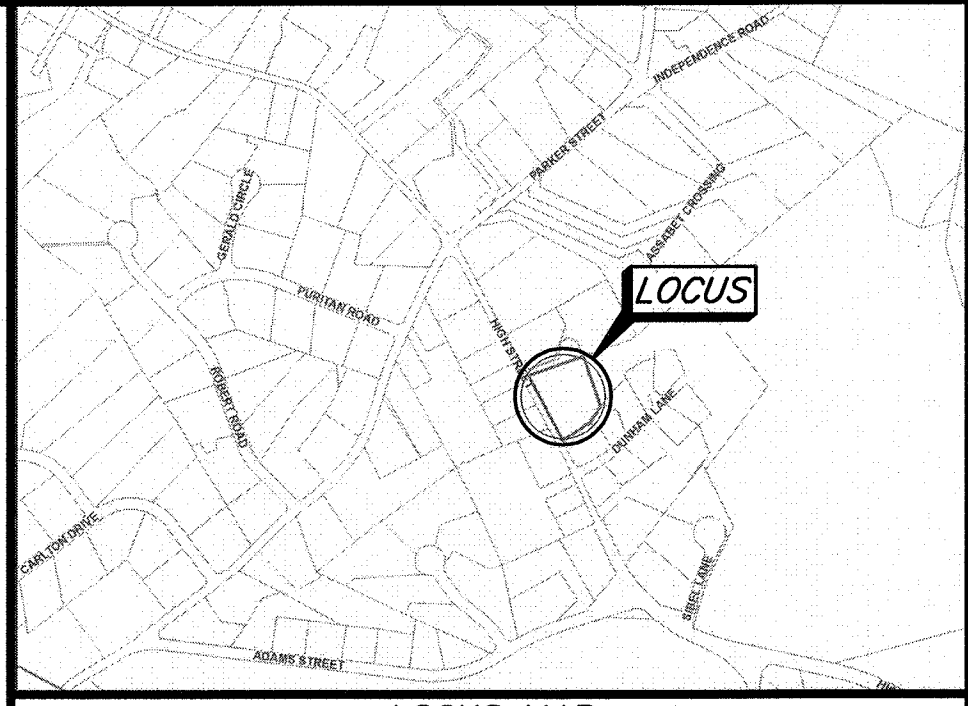
SCALE:	1"=20'	DATE:	JUNE, 2016
REF.:	---	PLAN NO.:	L-12984
JOB NO.:	31342	SHEET NO.:	4 of 9

CONSTRUCTION NOTES:

- UNLESS OTHERWISE SHOWN OR SPECIFIED, ALL WORK, MATERIALS AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION, TOWN OF ACTON REQUIREMENTS, AND INDIVIDUAL UTILITY COMPANY REQUIREMENTS.
- ALL UTILITY WORK, MATERIALS AND APPURTENANCES SHALL ALSO BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
- CONTRACTOR SHALL CALL 1-888-DIG-SAFE (1-888-344-7233) AND OBTAIN A DIG SAFE NUMBER A MINIMUM OF 72 HOURS IN ADVANCE OF SUBSURFACE EXPLORATION OR INITIATION OF CONSTRUCTION, AS REQUIRED BY LAW.
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONDITIONS FOUND WHICH PROHIBIT THE PLACEMENT OF UTILITIES AS INDICATED.
- CONSTRUCTION ACTIVITIES SHALL NOT RESULT IN ANY PROLONGED INTERRUPTION OF UTILITIES OR ACCESS TO ADJACENT SITES.
- PRIOR TO THE START OF CONSTRUCTION, THE EXISTING OFF-SITE AREAS AND HIGH STREET CONDITIONS (DRAINAGE, PAVEMENT, VEGETATION, ETC.) SHOULD BE INSPECTED AND THEIR CONDITIONS NOTED AND/OR PHOTOGRAPHED.
- FIVE DAYS PRIOR TO INITIATING ANY WORK WITHIN THE HIGH STREET RIGHT-OF-WAY OR ANY WORK THAT COULD IMPACT TRAFFIC FLOW AND PUBLIC SAFETY, THE ACTON POLICE DEPARTMENT SHALL BE NOTIFIED TO ENABLE SCHEDULING DETAIL OFFICERS. DETAIL OFFICERS SHALL BE PROVIDED AS REQUIRED BY THE POLICE DEPARTMENT AT THE EXPENSE OF THE DEVELOPER.
- AN EROSION AND SEDIMENTATION CONTROL PLAN IS INCLUDED AS PART OF THIS CONSTRUCTION DOCUMENT. THIS PLAN DESCRIBES THE MINIMUM METHODS TO BE USED DURING ALL SITE CONSTRUCTION TO AVOID DAMAGE OR ALTERATIONS TO SENSITIVE AREAS.
- FILL MATERIAL IMPORTED TO THE SITE SHALL BE CLEAN AND FREE OF ANY FOREIGN OR ORGANIC MATERIALS AND SHALL NOT CONTAIN ANY HAZARDOUS MATERIALS OR WASTE.
- THE PROPOSED LIMIT OF WORK SHALL BE MARKED IN THE FIELD PRIOR TO SITE CLEARING OR THE START OF CONSTRUCTION AND MAINTAINED AT ALL TIMES. LIMIT OF WORK LINE SHALL FOLLOW THE DRIP LINE IN THE VICINITY OF EXISTING TREES TO REMAIN.
- NO PAVING SHALL TAKE PLACE AFTER NOVEMBER 15 AND THE TOP (WEARING) COURSE SHALL ONLY BE PLACED AFTER THE BINDER COURSE HAS BEEN EXPOSED TO ONE WINTER SEASON.
- HAULING OF EARTH OR CONSTRUCTION DEBRIS TO AND FROM THE SITE SHALL BE RESTRICTED TO THE HOURS BETWEEN 9 AM AND 4 PM ON WEEKDAYS.
- PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A PROFESSIONAL LAND SURVEYOR TO SET TWO ADDITIONAL BENCHMARKS ON-SITE, OUTSIDE THE LIMITS OF WORK WHICH WILL NOT BE DISTURBED BY CONSTRUCTION.
- INSTALL MAGNETIZED MASONRY NAILS AT ALL POINTS OF CURVATURE AND TANGENCY ALONG THE ROADWAY IN THE BINDER PAVEMENT COURSE.
- NO PERMANENT MONUMENTS SHALL BE INSTALLED PRIOR TO THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES ON-SITE.

LEGEND

- PROPERTY LINE
- EASEMENT
- STREET CENTERLINE W/ STATIONING
- TBM TEMPORARY BENCHMARK
- CB/DH FOUND MONUMENT
- EXISTING CONTOUR
- EXISTING TREE LINE
- EXISTING TREES
- EXISTING BUILDING
- EDGE OF PAVEMENT
- UTILITY POLE
- OVERHEAD WIRES
- EXISTING SEWER MANHOLE
- EXISTING WATER LINE
- EXISTING HYDRANT
- PROPOSED BUILDING
- PROPOSED CONTOUR
- PROPOSED EDGE OF PAVEMENT
- PROPOSED DRAIN MANHOLE
- PROPOSED DRAIN LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER LINE
- PROPOSED WATER LINE
- PROPOSED HYDRANT
- PROPOSED GATE VALVE
- PROPOSED DRYWELL

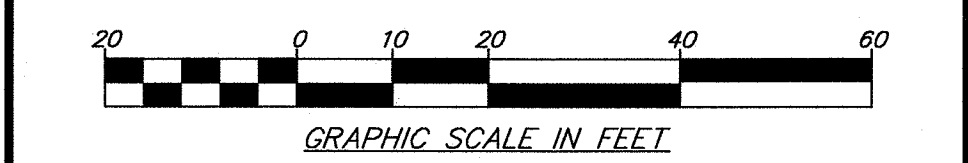


LOCUS MAP
NOT TO SCALE

ACTON ZONING BOARD OF APPEALS

DATE OF APPROVAL:
DATE OF ENDORSEMENT:

APPROVAL UNDER M.G.L. CH. 40B, SEC. 20-23



SURV: MSB/CRB CALC.: MKW DRAFT: RED
NR: 766/95, 722Y/101 DEED: 66792-231 CHECK: ---

REVISIONS	
6-7-16	ORIGINAL ENDORSEMENT
7-20-16	PER TOWN REVIEW COMMENTS
APPROVAL UNDER M.G.L. CH. 40B, SEC. 20-23	
DANIEL B. WOLFE REGISTERED PROFESSIONAL ENGINEER No. 36323 CIVIL 7-20-16	

SHEET TITLE:
SITE DEVELOPMENT PLAN

DESIGNED FOR:
248 HIGH STREET, LLC

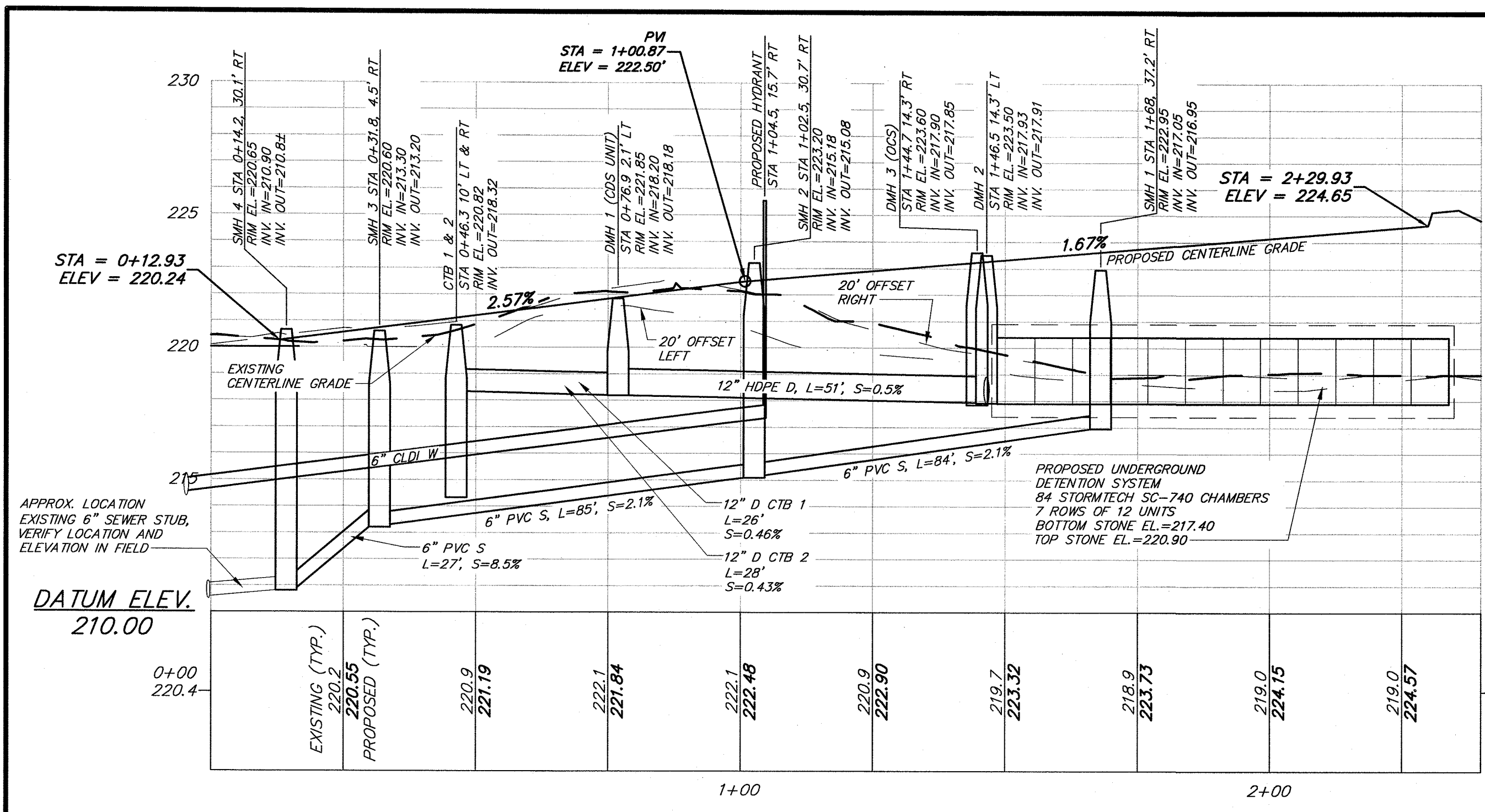
ADDRESS:
248 HIGH STREET
ACTON, MA

LOT NO.: 1 PL 105 OF 2016 ASSESSOR MAP: J3 ASSESSOR PARCEL: 7

DAVID E. ROSS ASSOCIATES, INC.

CIVIL ENGINEERS - LAND SURVEYORS
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P.O. Box 368
Ayer, MA, 01432-0368
978-772-6232
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www.davidross.com

SCALE: 1"=20' DATE: JUNE, 2016
REF.: --- PLAN NO.: L-12984
JOB NO.: 31342 SHEET NO.: 5 of 9

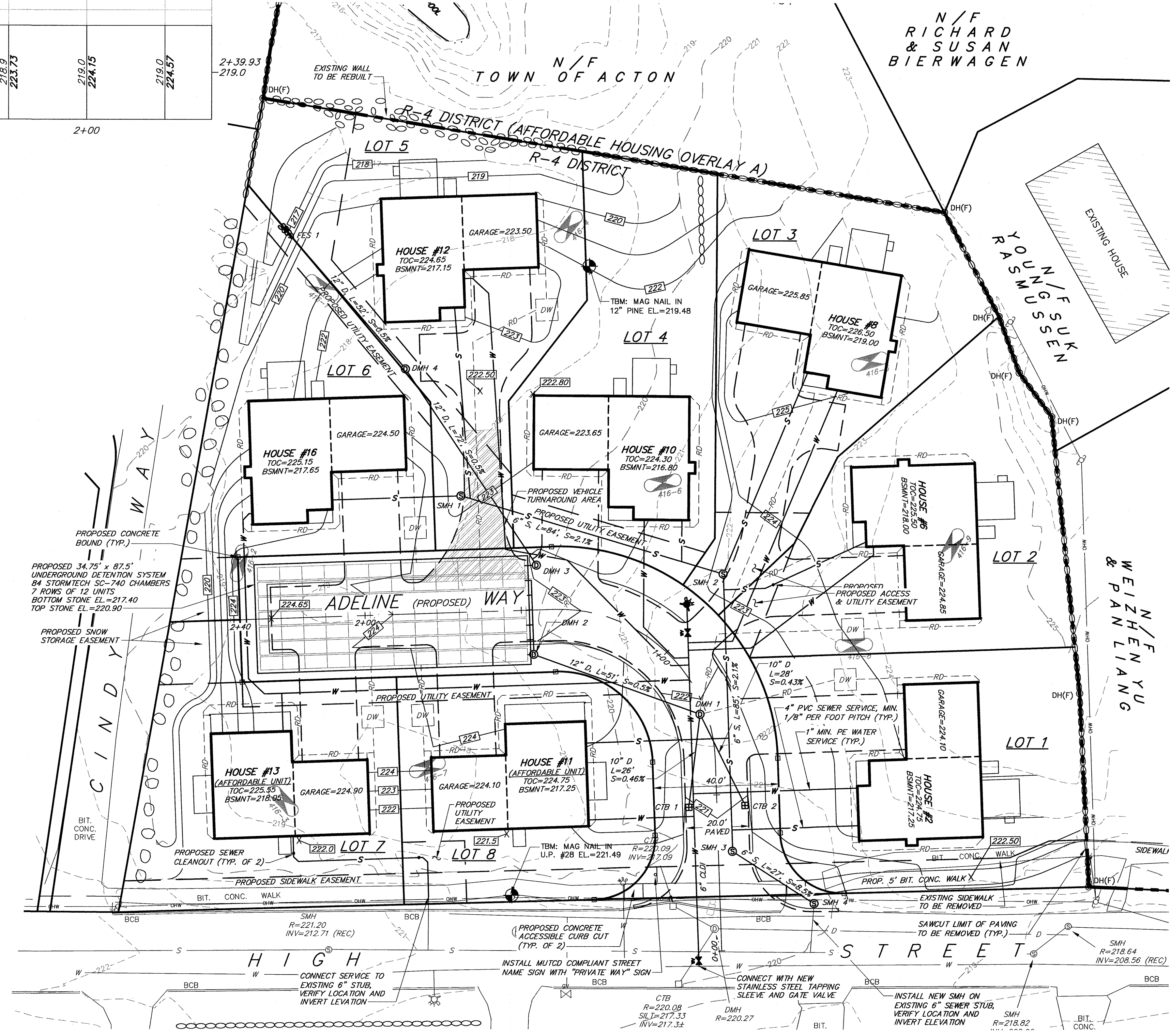


ADELINE WAY CENTERLINE PROFILE
SCALE: 1"=20'H, 1"=4'V

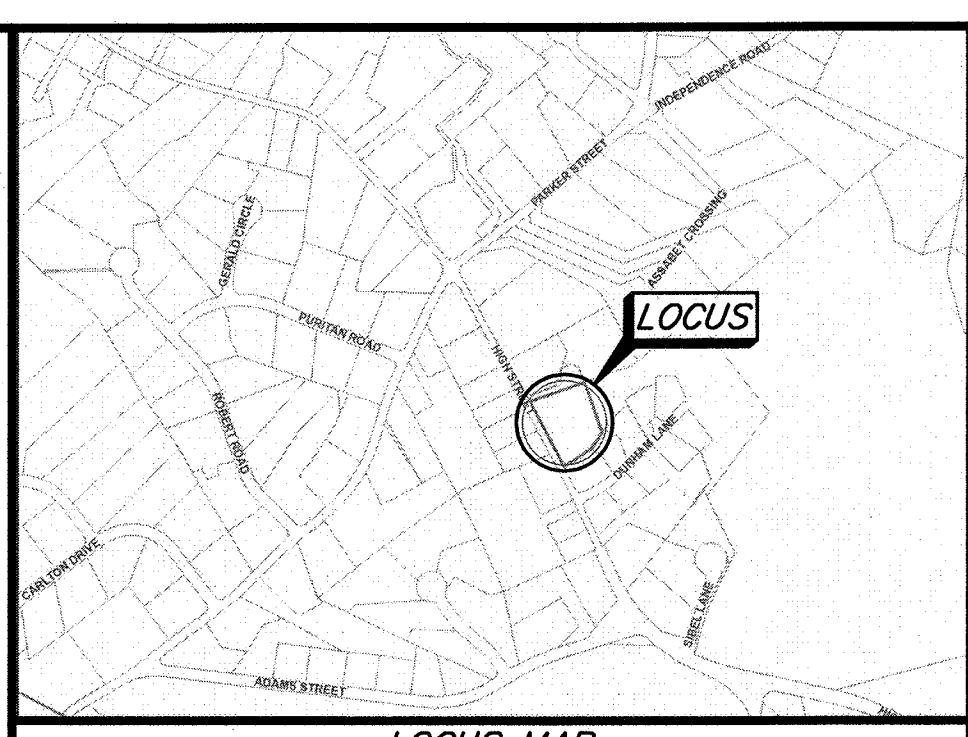
DRAINAGE STRUCTURE TABLE				
STRUCTURE	RIM EL.	INVERT IN EL.	INVERT OUT EL.	PIPE SIZE
CTB 1	220.82	---	218.32 DMH 1	10" HDPE
CTB 2	220.82	---	218.32 DMH 1	10" HDPE
DMH 1 (CDS UNIT)	221.85	218.20	218.18 DMH 2	12" HDPE
DMH 2	223.50	217.93	217.91 DETENTION	12" HDPE
DMH 3 (CDS)	222.95	217.90 DETENTION	217.85 DMH 4	12" HDPE
DMH 4	222.30	217.49	217.44 FES 1	12" HDPE
FES 1	---	---	217.18	12" HDPE

SEWER STRUCTURE TABLE				
STRUCTURE	RIM EL.	INVERT IN EL.	INVERT OUT EL.	PIPE SIZE
SMH 1	222.95	217.05	216.95 SMH 2	6" PVC
SMH 2	223.20	215.18	215.08 SMH 3	6" PVC
SMH 3	220.60	213.30	213.20 SMH 4	6" PVC
SMH 4	220.65	210.90	210.8± (VERIFY)	6" PVC

- UTILITIES NOTES:**
- DRAINAGE SHALL BE HEAVY DUTY, HIGH DENSITY POLYETHYLENE PIPE (HDPE).
 - GAS, TELEPHONE, CABLE, ELECTRIC AND OTHER UTILITIES SHALL BE PLACED UNDERGROUND, AS DESIGNED BY THE APPROPRIATE UTILITY COMPANY. LOCATION AND INSTALLATION SHALL BE SUCH THAT THEY WILL NOT INTERFERE WITH THE DRAINAGE SYSTEMS OR WITH THE MAINTENANCE OF SUCH.
 - EACH UTILITY SHALL HAVE A COLOR CODED IDENTIFICATION TAPE PLACED A MINIMUM OF 12" ABOVE THE PIPE OR CONDUIT AND NOT CLOSER THAN 12" FROM THE FINISHED GRADE. TAPE SHALL BE 6" WIDE, DURABLE, NON-Biodegradable PLASTIC. ALL BACKFILL MATERIAL AROUND PIPE OR CONDUIT SHALL HAVE NO STONES GREATER THAN 2".
 - ALL CONSTRUCTION DEBRIS, REFUSE, SURPLUS CONSTRUCTION MATERIAL, AND OTHER SOLID WASTE SHALL BE REMOVED FROM THE SITE.
 - ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH TOWN OF ACTON STANDARDS.
 - NEW WATER MAINS AND SERVICES SHALL BE INSTALLED A MINIMUM OF 10' HORIZONTALLY OR 18" VERTICALLY ABOVE EXISTING OR NEW SEWERS. WHERE THE SEPARATION IS LESS THAN STATED ABOVE, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF CLASS 150, OR GREATER, MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATER TIGHTNESS.
 - CATCH BASIN SUMPS, STORMWATER TREATMENT UNITS, AND THE DETENTION SYSTEM SHALL BE THOROUGHLY CLEANED UPON THE COMPLETION OF CONSTRUCTION AND ANNUALLY THEREAFTER.
 - ROOF DRAIN CONNECTIONS SHOWN FOR COORDINATION PURPOSES WITH OTHER UTILITIES. CONTRACTOR SHALL DETERMINE LOCATION AND ELEVATIONS. ALL ROOF DRAINS SHALL BE CONNECTED TO THE UNDERGROUND DETENTION SYSTEM EITHER DIRECTLY OR THROUGH THE DRAINAGE SYSTEM AS SHOWN.
 - ALL SEWER MAIN AND SERVICE CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE "SEWER USE REGULATIONS" OF THE ACTON BOARD OF SEWER COMMISSIONERS.
 - ALL WATER MAIN AND SERVICE CONNECTION CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE "WATER MAINS AND APPURTENANCES SPECIFICATIONS" OF THE ACTON WATER DISTRICT.



ADELINE WAY SITE PLAN
SCALE: 1"=20'

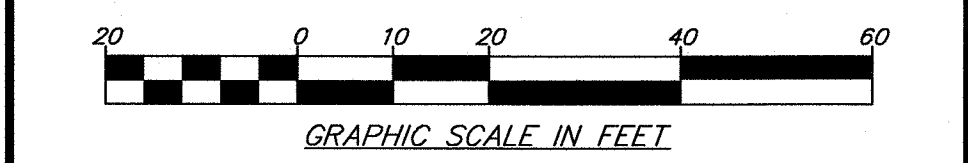


LOCUS MAP
NOT TO SCALE

ACTON ZONING BOARD OF APPEALS

DATE OF APPROVAL:
DATE OF ENDORSEMENT:

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SURV.: MSB/CRB	CALC.: MKW	DRAFT: RED
NR: 766/95, 722Y/101	DEED: 66792-231	CHECK: ---

REVISIONS

6-7-16	ORIGINAL ENDORSEMENT
7-20-16	PER TOWN REVIEW COMMENTS

DANIEL B. WOLFE
No. 35523
REGISTERED CIVIL ENGINEER
7-20-16

SHEET TITLE:
PLAN & PROFILE

DESIGNED FOR:
248 HIGH STREET, LLC

ADDRESS:
248 HIGH STREET
ACTON, MA

LOT NO.: 1	ASSESSOR MAP: J3	ASSESSOR PARCEL: 7
PL 105 OF 2016		

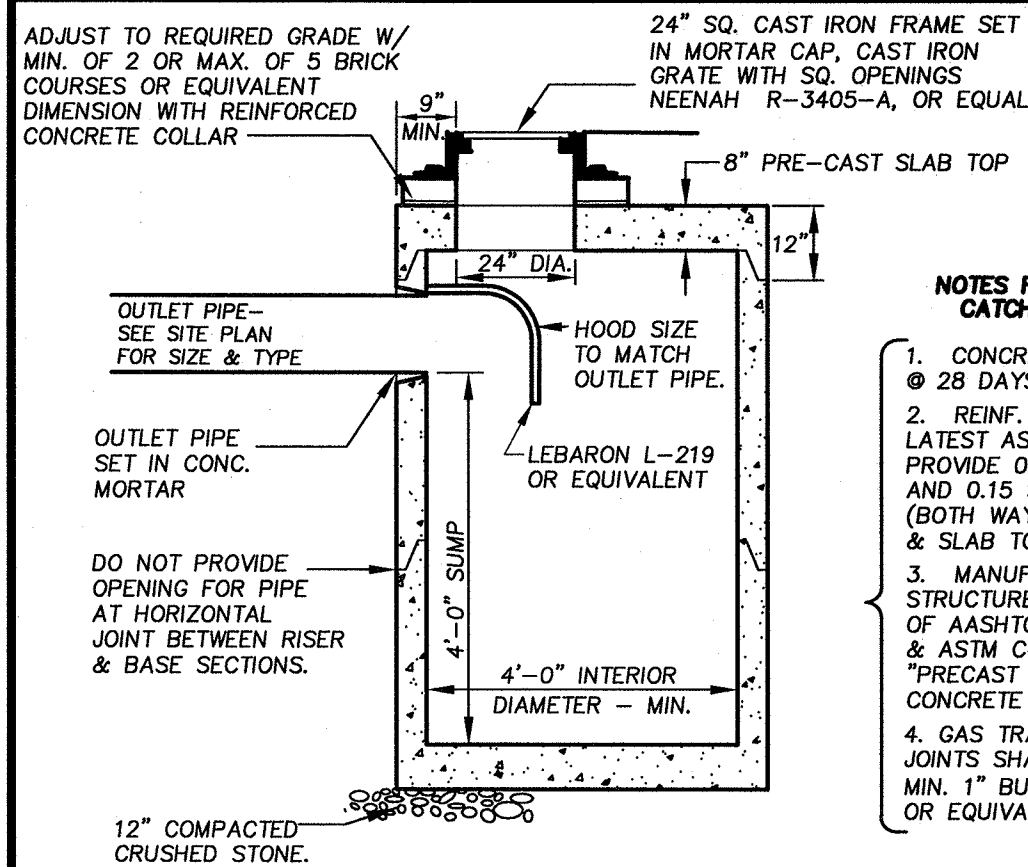
DAVID E. ROSS ASSOCIATES, INC.

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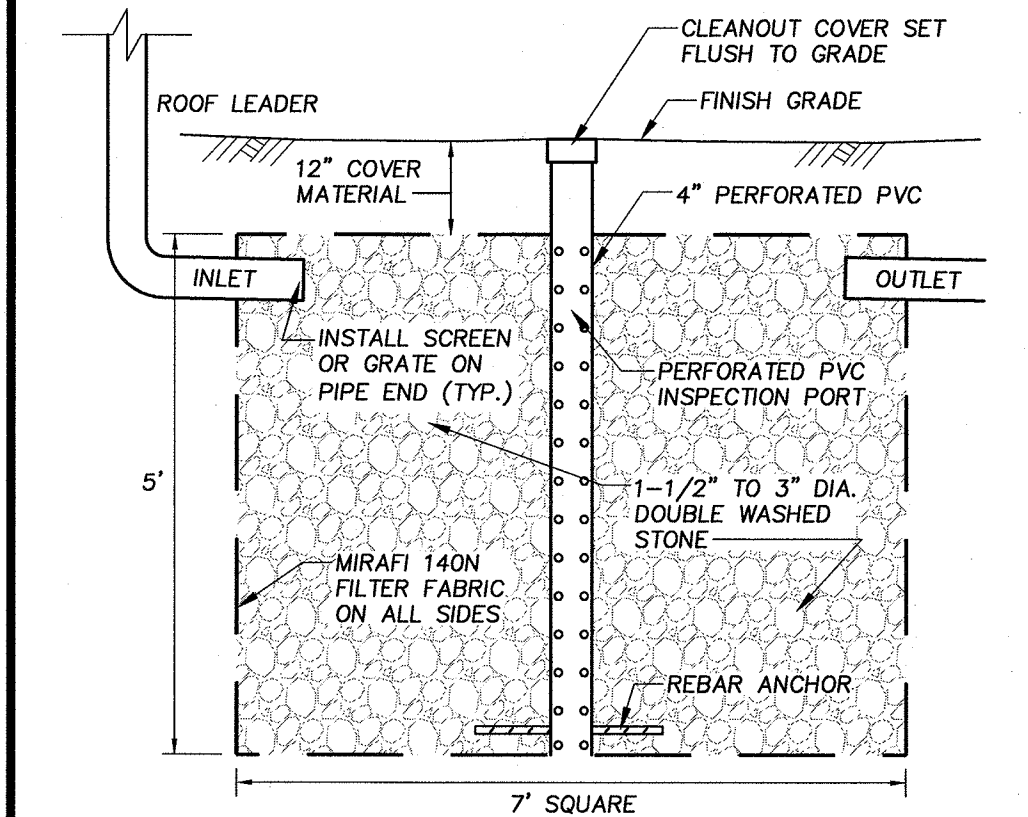
978-772-6232
FAX 978-772-6258
www.davidross.com

SCALE: 1"=20'	DATE: JUNE, 2016
REF.: ---	PLAN NO.: L-12984
JOB NO.: 31342	SHEET NO.: 6 of 9



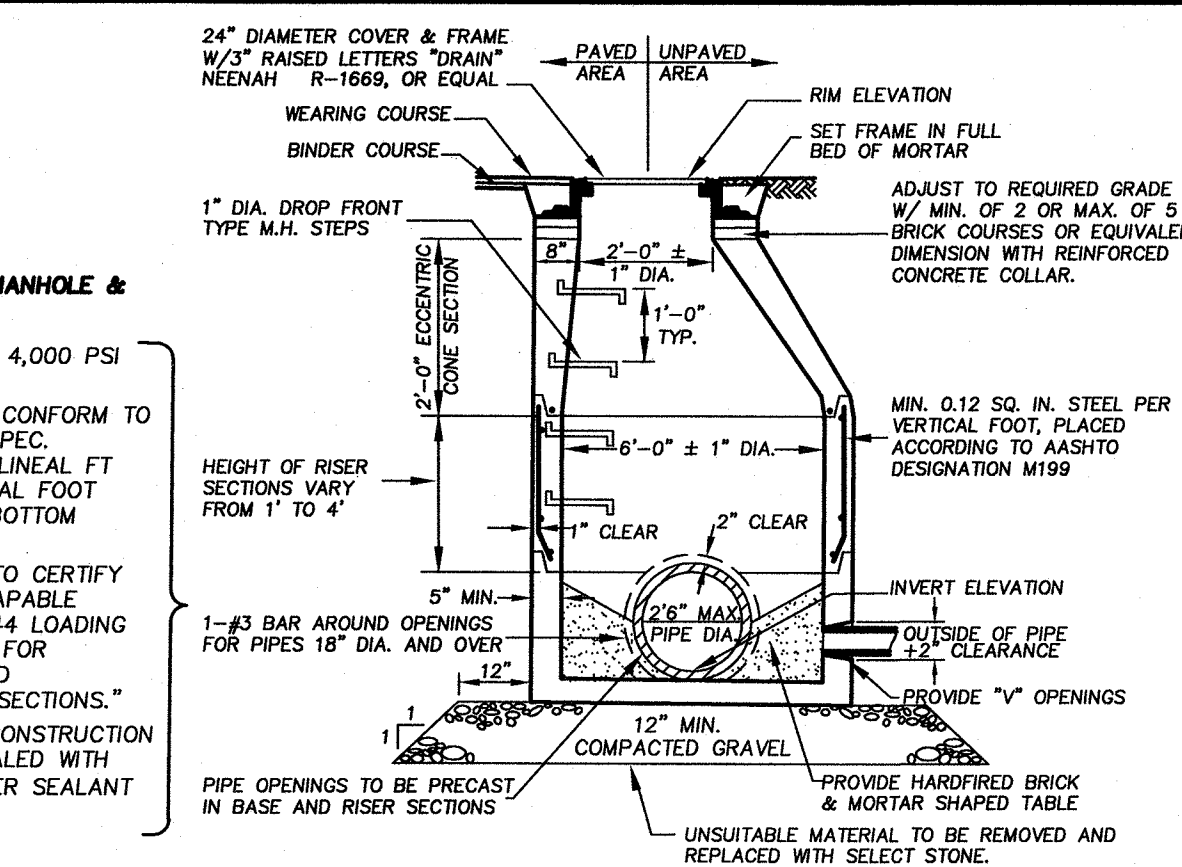
- NOTES FOR DRAINMANHOLE & CATCHBASIN**
1. CONCRETE TO BE 4,000 PSI @ 28 DAYS.
 2. REINF. STEEL TO CONFORM TO LATEST ASTM A185 SPEC. PROVIDE 0.15 SQ. IN./LINEAL FT. AND 0.15 SQ. IN./LINEAL FOOT (BOTH WAYS) BASE BOTTOM & SLAB TOP.
 3. MANUFACTURER TO CERTIFY STRUCTURE TO BE CAPABLE OF AASHTO HS-20-44 LOADING & ASTM C478 SPEC. FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
 4. GAS TRAPS AND CONSTRUCTION JOINTS SHALL BE SEALED WITH MIN. 1" BUTYL-RUBBER SEALANT OR EQUIVALENT.

PRECAST FLAT TOP CATCHBASIN
NOT TO SCALE

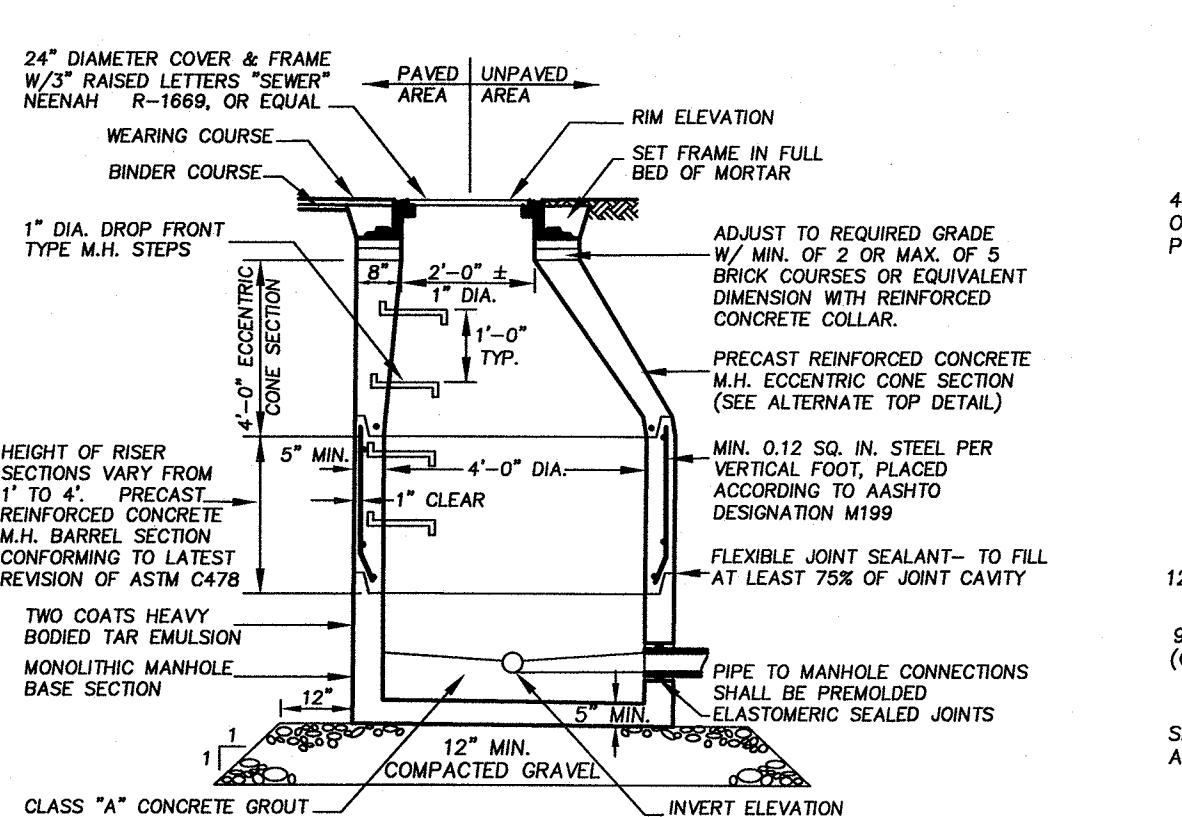


NOTE: PROVIDE MINIMUM 10' SETBACK FROM DRYWELL TO BUILDING FOUNDATION.

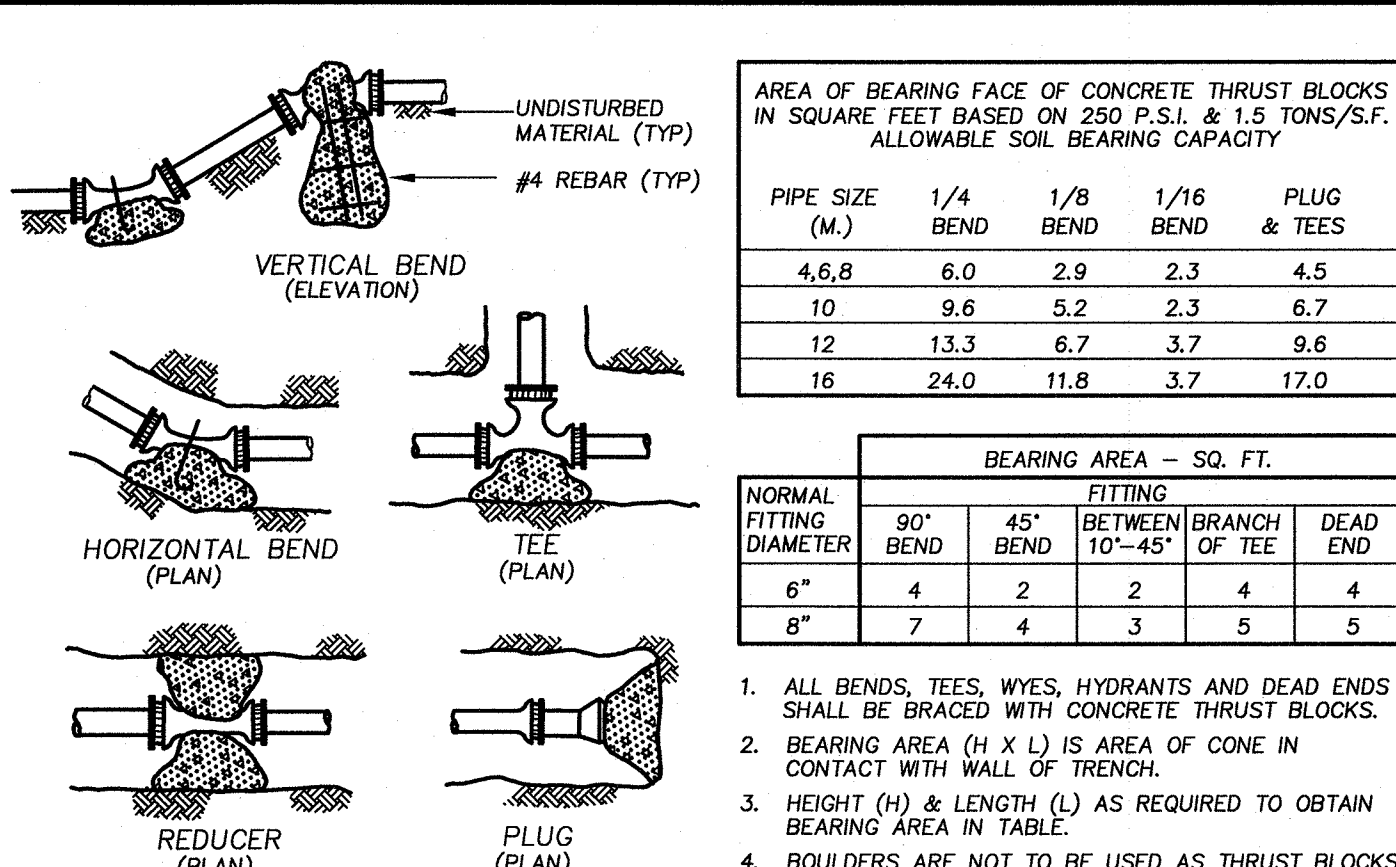
DRYWELL DETAIL
NOT TO SCALE



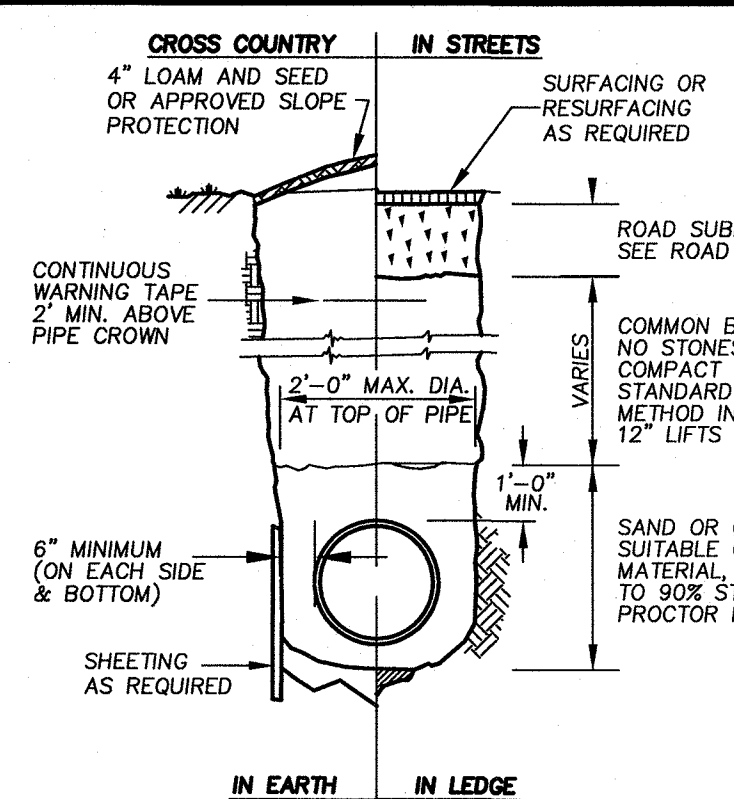
PRECAST CONCRETE DRAIN MANHOLE
NOT TO SCALE



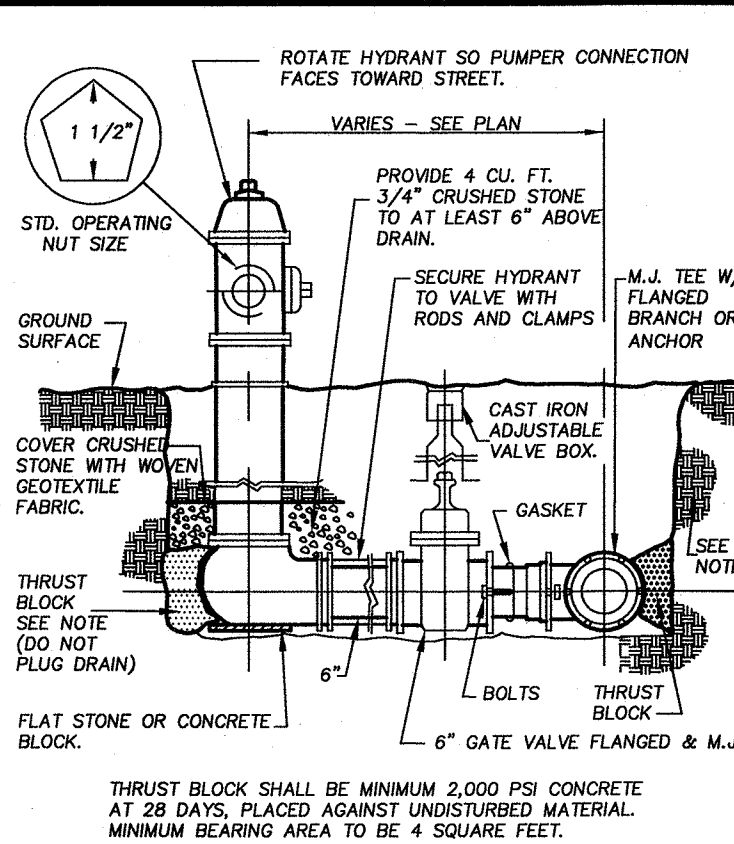
PRECAST CONCRETE SEWER MANHOLE
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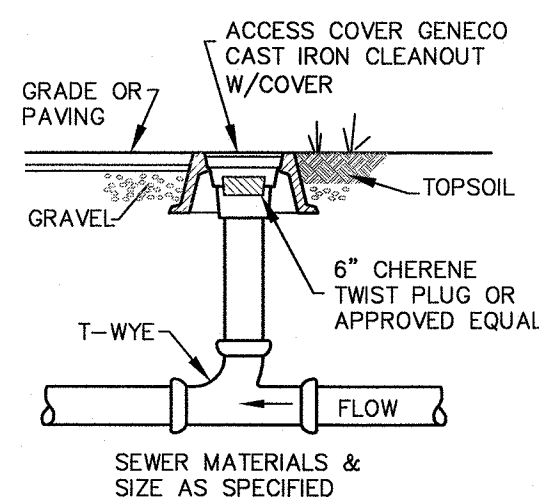
THRUST BLOCK DETAILS
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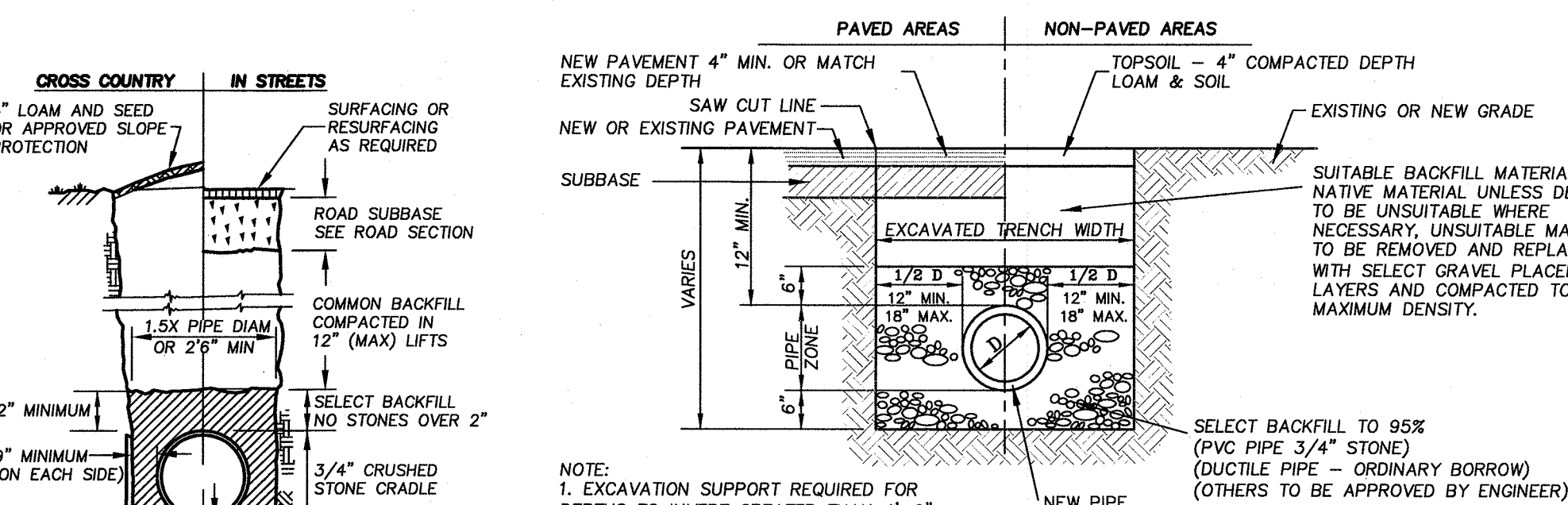
WATER MAIN TRENCH
NOT TO SCALE



TYPICAL HYDRANT AND VALVE
NOT TO SCALE

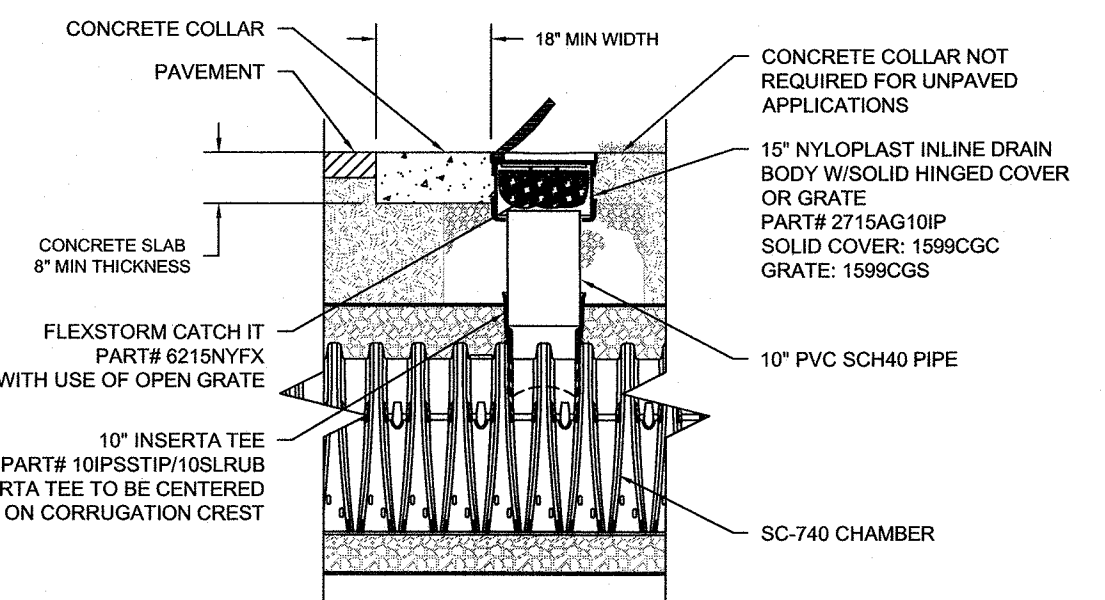


SEWER SERVICE CLEANOUT
NOT TO SCALE



SEWER TRENCH
NOT TO SCALE

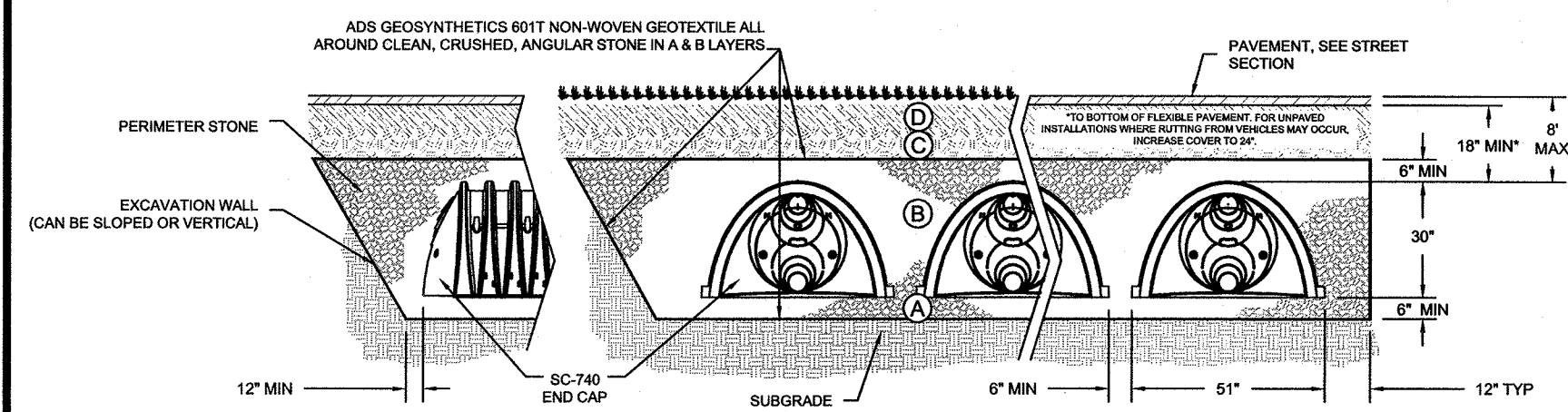
DRAINAGE TRENCH
NOT TO SCALE



STORMTECH SC-740 INSPECTION PORT
NOT TO SCALE

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 1" (40 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'C' LAYER.	GRAVEL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. AASHTO M1401 A-1, A-2.4, A-3 OR AASHTO M437 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 90% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 80% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE AASHTO M437 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE AASHTO M437 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. 1"

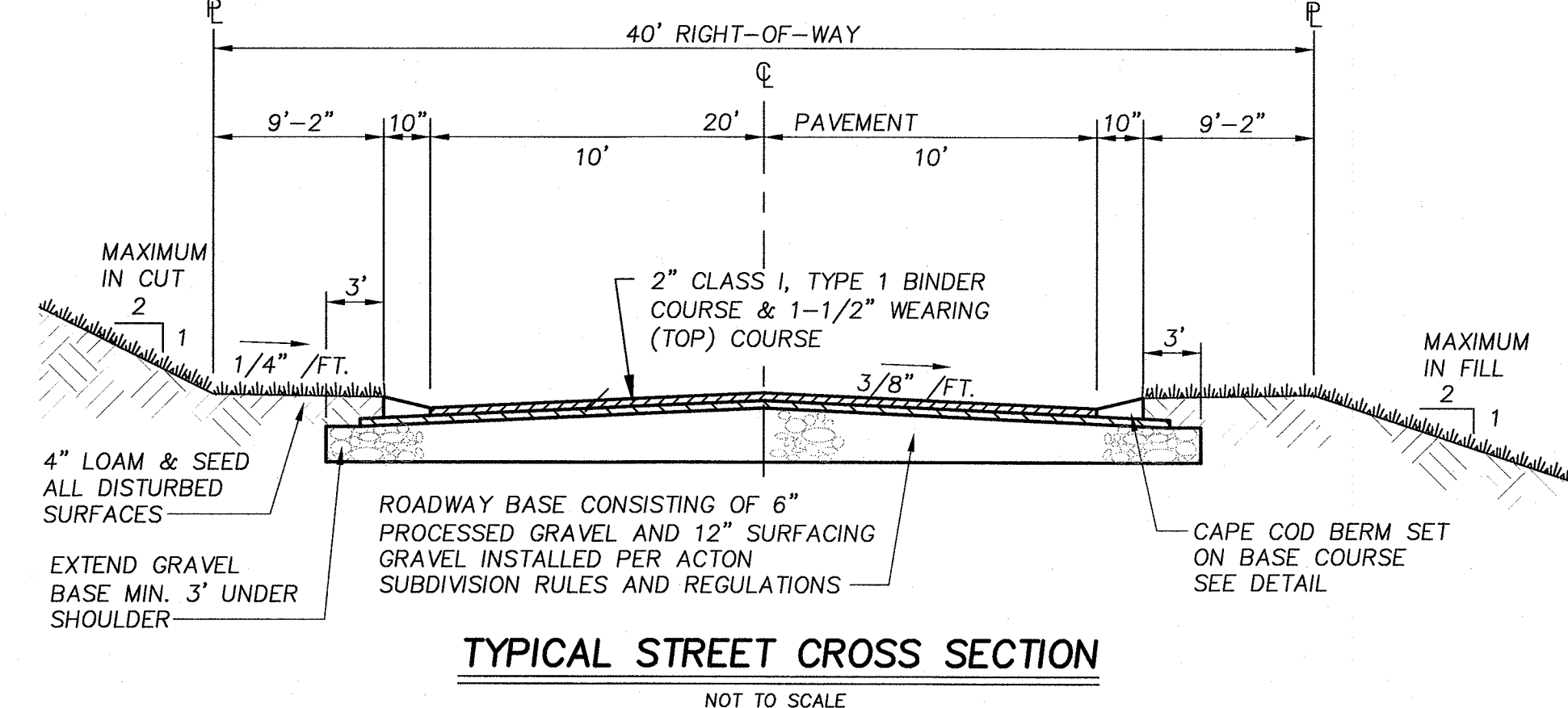
- PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE."
 2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTIONED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERSAGES WITH A VIBRATORY COMPACTOR.
 3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



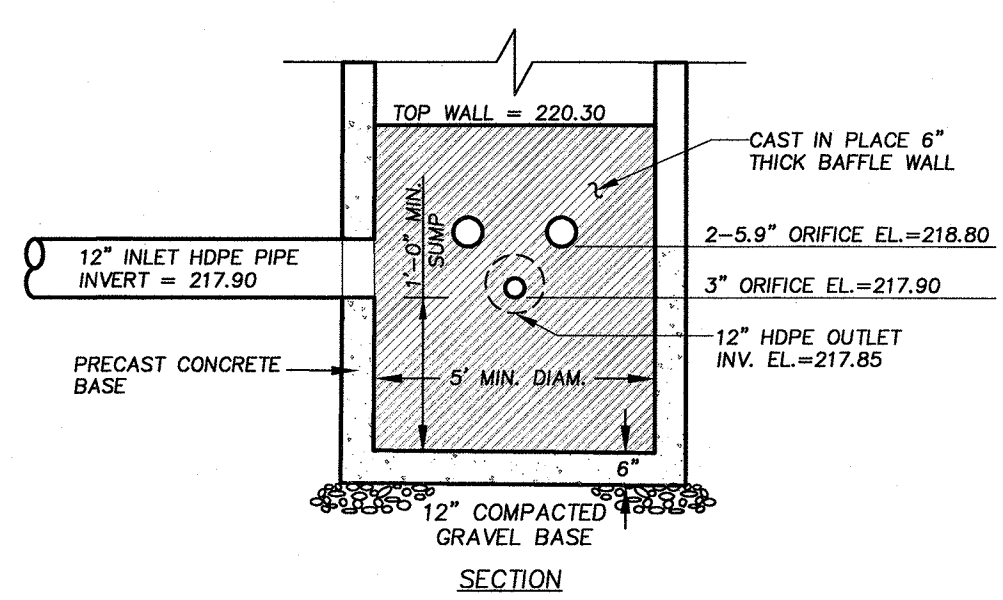
NOTES:

1. SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2416 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" OR ASTM F2322 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR VERTICAL AND SLOPED EXCAVATION WALLS.

STORMTECH SC-740 DETENTION SYSTEM
NOT TO SCALE



TYPICAL STREET CROSS SECTION
NOT TO SCALE



DETENTION BASIN OUTLET CONTROL STRUCTURE (DMH 3)
NOT TO SCALE

1. REFER TO PRECAST DRAIN MANHOLE DETAIL, THIS SHEET, FOR ADDITIONAL INFORMATION.
2. ALL CONCRETE TO BE STEEL REINFORCED, PRE-CAST, 4,000 PSI, AIR-ENTRAINED, AND BE CERTIFIED BY MANUFACTURER TO MEET AASHTO, HS-20 LOADING.
3. 6" THICK Baffle WALL SHALL BE FORMED AND POURED IN PLACE IN 5' MIN. DIAMETER PRECAST MANHOLE STRUCTURE.
4. ORIENT PLACEMENT OF Baffle WALL TO SEPARATE THE INLET AND OUTLET PIPES.
5. WATER TIGHT SEAL ALL JOINTS WITH MORTAR, RUBBER GASKET OR HYDRAULIC CEMENT.

CDS2015-4-C DESIGN NOTES

CDS2015-4-C RATED TREATMENT CAPACITY IS 1.4 CFS, OR PER LOCAL REGULATIONS. MAXIMUM HYDRAULIC INTERNAL BYPASS CAPACITY IS 10.0 CFS. IF THE SITE CONDITIONS EXCEED 10.0 CFS, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

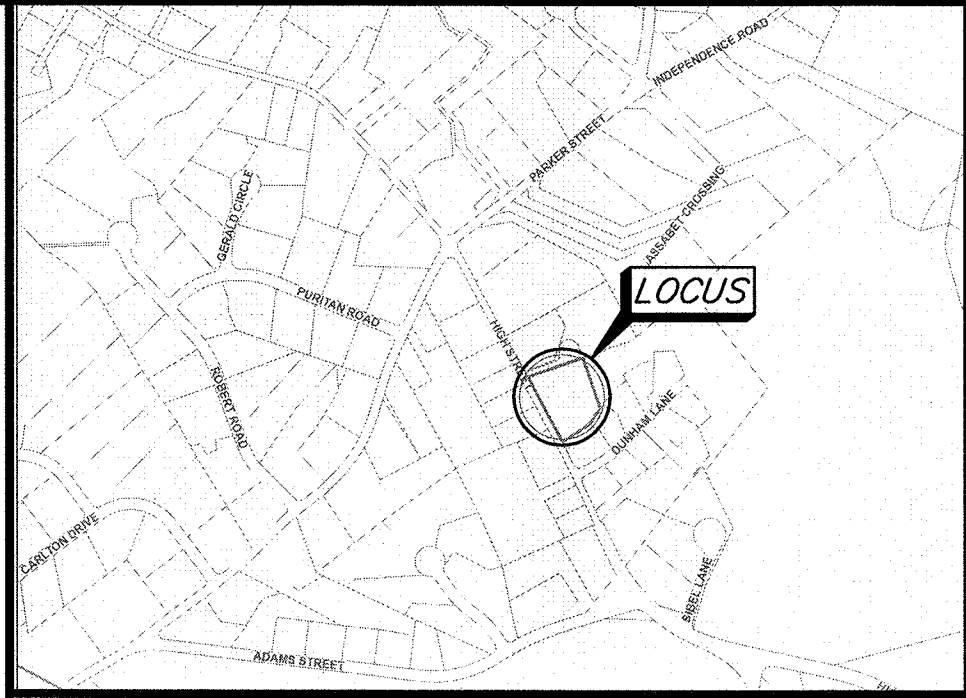
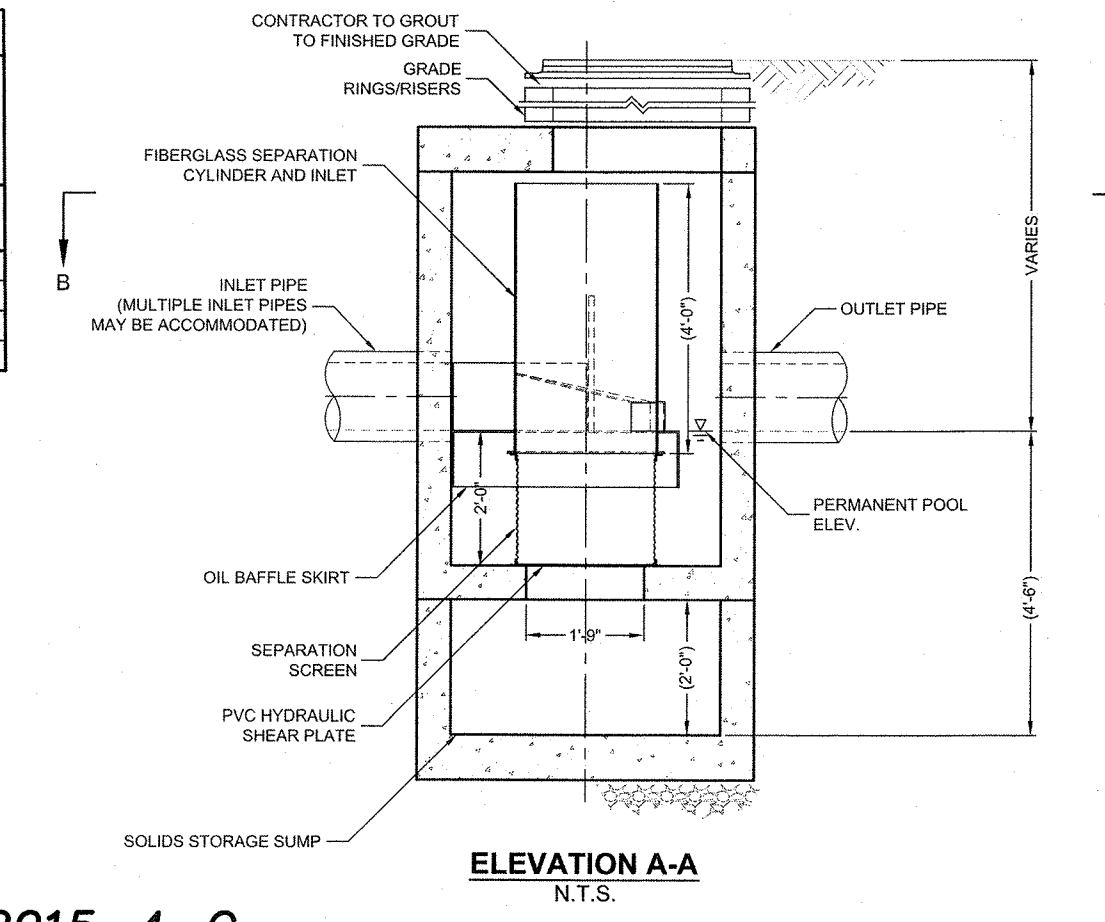
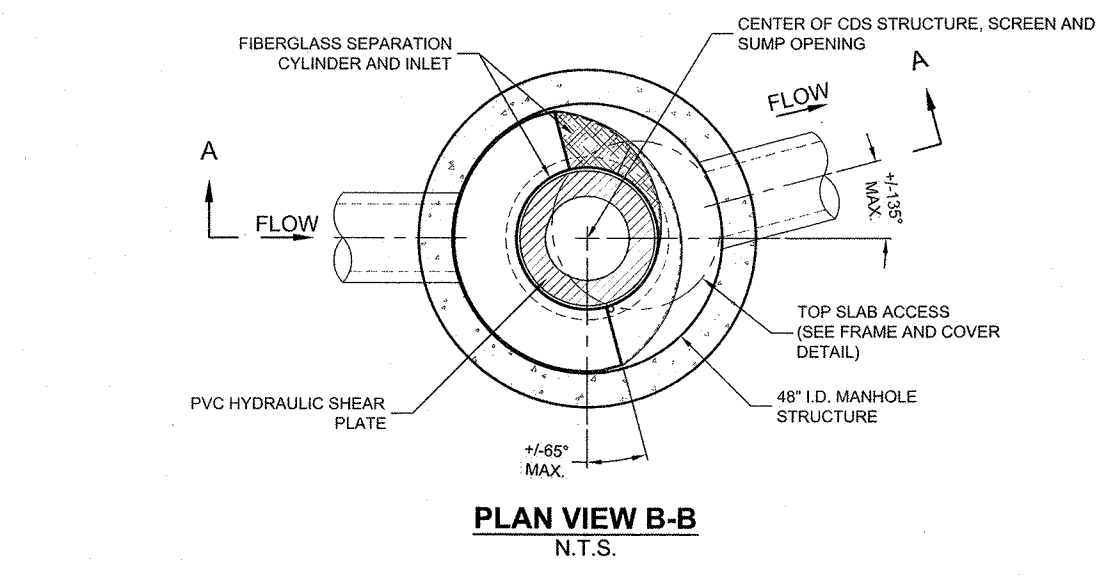
CONFIGURATION DESCRIPTION

GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES

- GENERAL NOTES**
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
 2. DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
 3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH CONSTRUCTION PRODUCTS REPRESENTATIVE. www.contech-cp.com
 4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
 5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT OR BELOW. THE OUTLET PIPE INVERT ELEVATION, ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
 6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

- INSTALLATION NOTES**
1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
 2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
 3. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
 4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
 5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH CDS2015-4-C TREATMENT UNIT (DMH 1)
NOT TO SCALE



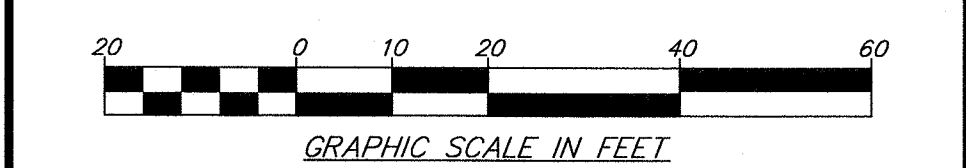
ACTON ZONING BOARD OF APPEALS

DATE OF APPROVAL:

DATE OF ENDORSEMENT:

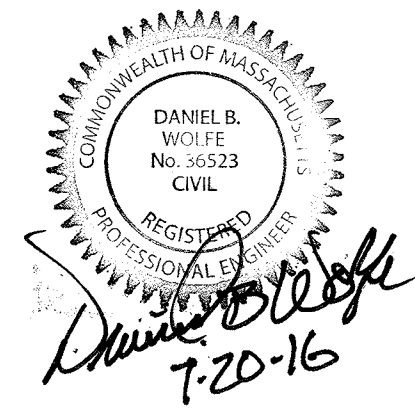
SURV.: MSB/CRB	CALC.: MKW	DRAFT: REO
NR: 766/95, 722Y/101	DEED: 66792-231	CHECK: DBW

APPROVAL UNDER M.G.L. CH. 40B, SEC. 20-23



SURV.: MSB/CRB	CALC.: MKW	DRAFT: REO
NR: 766/95, 722Y/101	DEED: 66792-231	CHECK: DBW

REVISIONS	
6-7-16	ORIGINAL ENDORSEMENT
7-20-16	PER TOWN REVIEW COMMENTS



SHEET TITLE: CONSTRUCTION DETAILS

DESIGNED FOR: 248 HIGH STREET, LLC

ADDRESS: 248 HIGH STREET
ACTON, MA

LOT NO.: 1 PL 105 OF 2016	ASSESSOR MAP: J3	ASSESSOR PARCEL: 7
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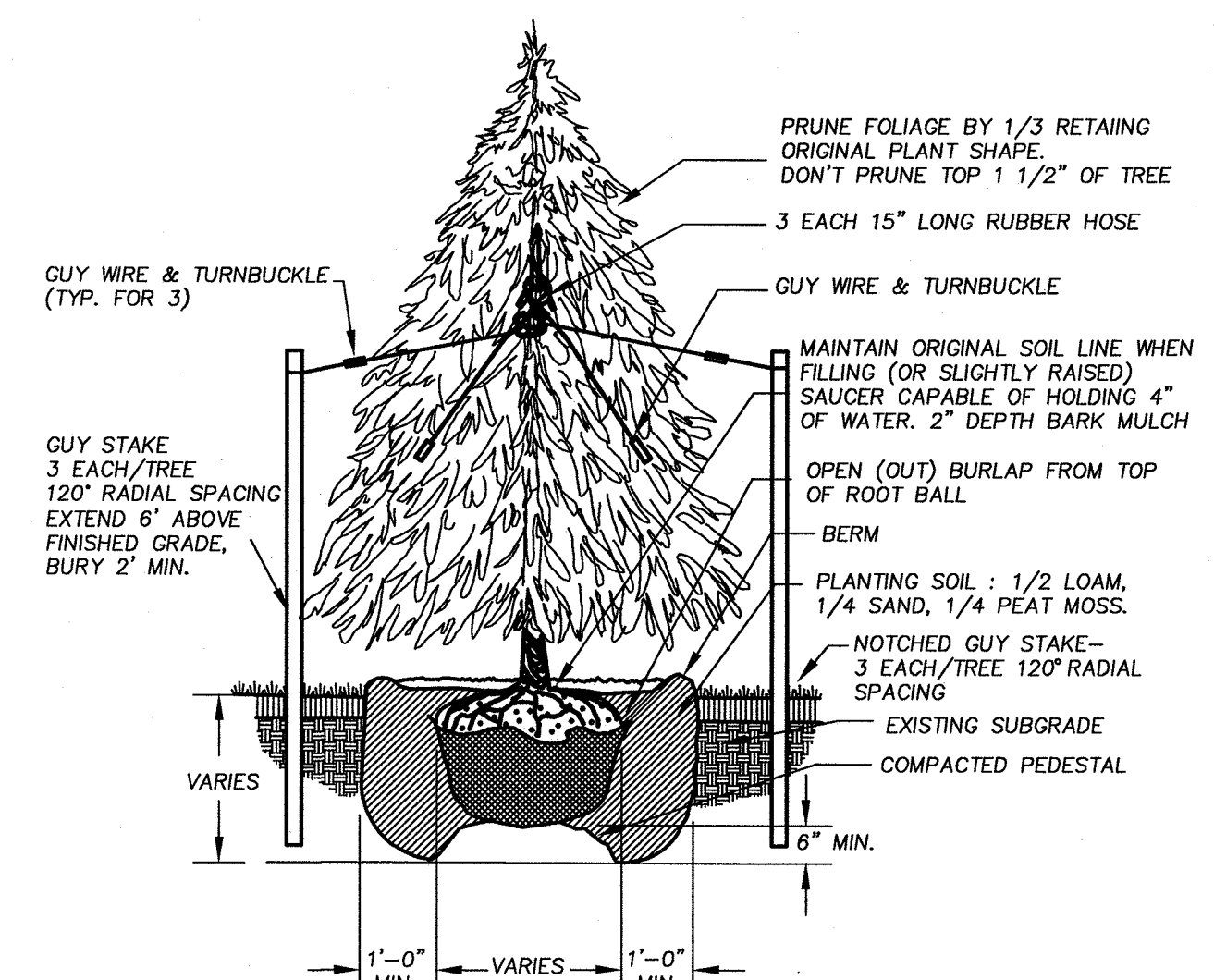
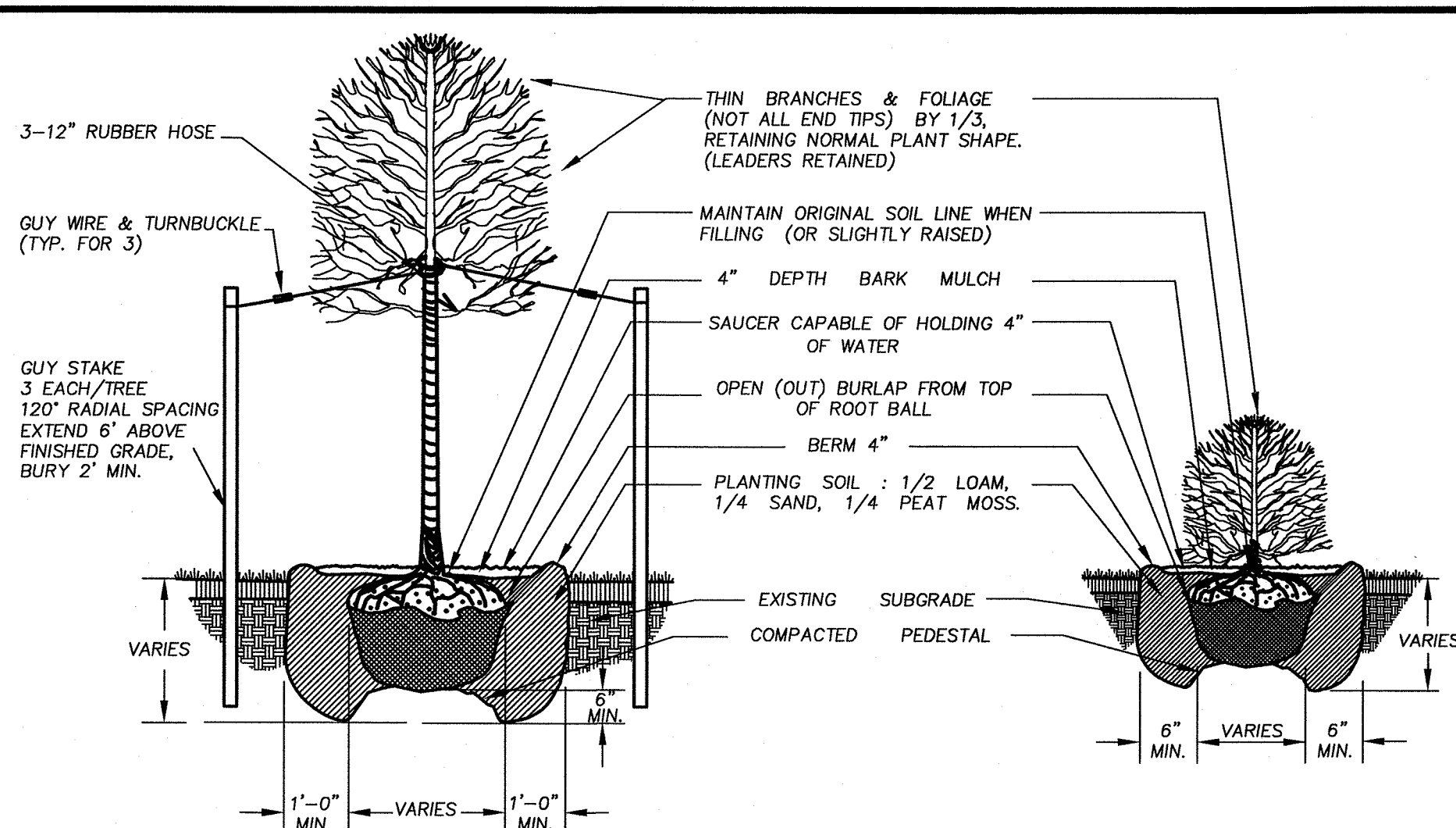
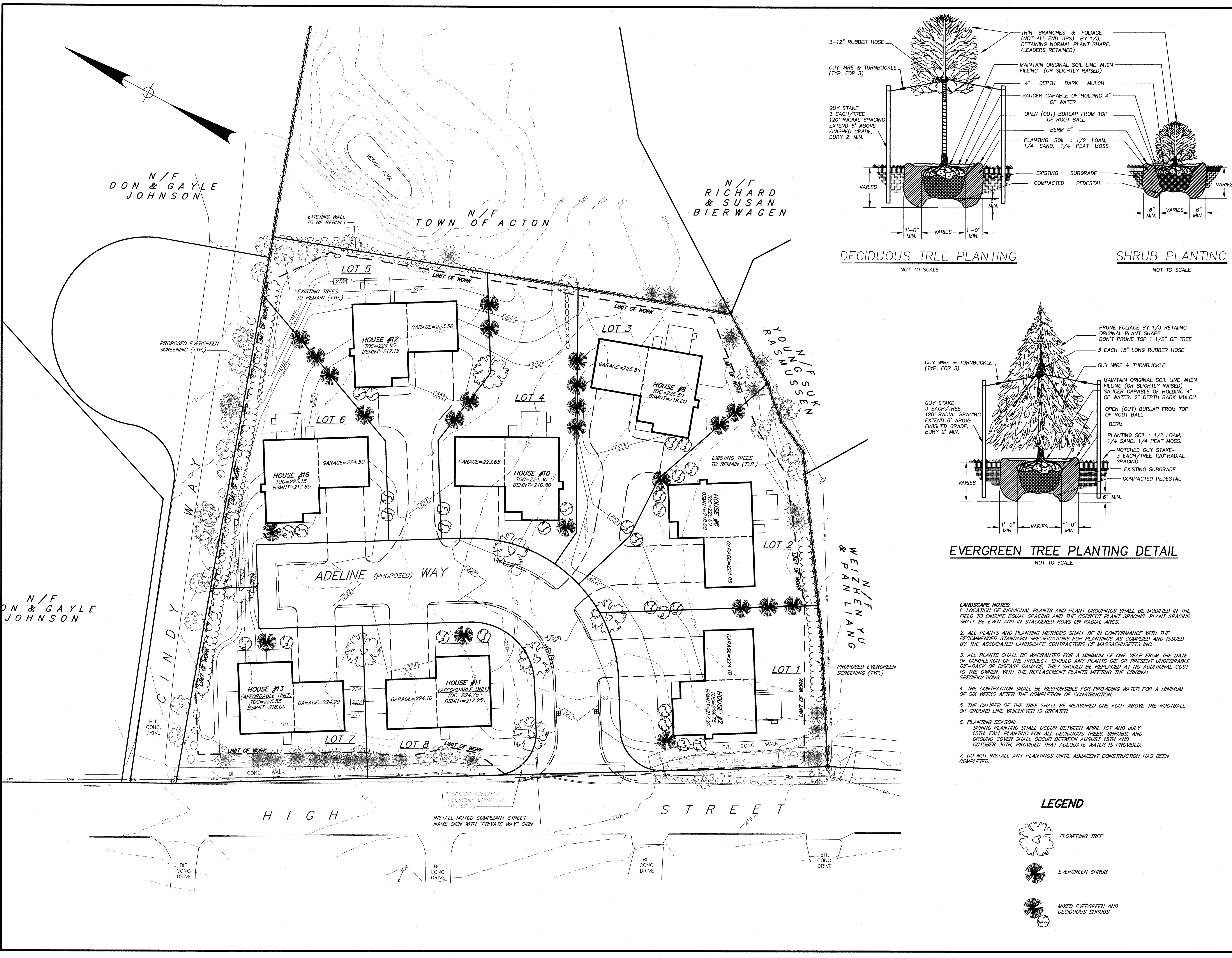
DAVID E. ROSS ASSOCIATES, INC.

CIVIL ENGINEERS - LAND SURVEYORS
ENVIRONMENTAL CONSULTANTS

111 Fitchburg Road
P.O. Box 368
Ayer, MA, 01432-0368

978-772-6232
FAX 978-772-6258
www.davidross.com

SCALE: 1"=20'	DATE: JUNE, 2016
REF.: ---	PLAN NO.: L-12984
JOB NO.: 31342	SHEET NO.: 7 of 9



- LANDSCAPE NOTES:**
1. LOCATION OF INDIVIDUAL PLANTS AND PLANT GROUPINGS SHALL BE MODIFIED IN THE FIELD TO ENSURE EQUAL SPACING AND THE CORRECT PLANT SPACING. PLANT SPACING SHALL BE EVEN AND IN STAGGERED ROWS OR RADIAL ARCS.
 2. ALL PLANTS AND PLANTING METHODS SHALL BE IN CONFORMANCE WITH THE RECOMMENDED STANDARD SPECIFICATIONS FOR PLANTINGS AS COMPILED AND ISSUED BY THE ASSOCIATED LANDSCAPE CONTRACTORS OF MASSACHUSETTS INC.
 3. ALL PLANTS SHALL BE WARRANTED FOR A MINIMUM OF ONE YEAR FROM THE DATE OF COMPLETION OF THE PROJECT. SHOULD ANY PLANTS DIE OR PRESENT UNDESIRABLE DIE-BACK OR DISEASE DAMAGE, THEY SHOULD BE REPLACED AT NO ADDITIONAL COST TO THE OWNER, WITH THE REPLACEMENT PLANTS MEETING THE ORIGINAL SPECIFICATIONS.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WATER FOR A MINIMUM OF SIX WEEKS AFTER THE COMPLETION OF CONSTRUCTION.
 5. THE CALIPER OF THE TREE SHALL BE MEASURED ONE FOOT ABOVE THE ROOTBALL OR GROUND LINE WHICHEVER IS GREATER.
 6. PLANTING SEASON: SPRING PLANTING SHALL OCCUR BETWEEN APRIL 1ST AND JULY 15TH. FALL PLANTING FOR ALL DECIDUOUS TREES, SHRUBS, AND GROUND COVER SHALL OCCUR BETWEEN AUGUST 15TH AND OCTOBER 30TH, PROVIDED THAT ADEQUATE WATER IS PROVIDED.
 7. DO NOT INSTALL ANY PLANTINGS UNTIL ADJACENT CONSTRUCTION HAS BEEN COMPLETED.

LEGEND

- FLOWERING TREE
- EVERGREEN SHRUB
- MIXED EVERGREEN AND DECIDUOUS SHRUBS

LOCUS

LOCUS MAP
NOT TO SCALE

ACTON ZONING BOARD OF APPEALS

DATE OF APPROVAL:

DATE OF ENDORSEMENT:

APPROVAL UNDER M.G.L. CH. 40B, SEC. 20-23

20 0 10 20 40 60
GRAPHIC SCALE IN FEET

SURV.: MSB/CRB	CALC.: MKW	DRAFT: REO
NR: 766/95, 722Y/101	DEED: 66792-231	CHECK: DBW

REVISIONS

6-7-16	ORIGINAL ENDORSEMENT
7-20-16	PER TOWN REVIEW COMMENTS

COMMONWEALTH OF MASSACHUSETTS

DANIEL B. WOLFE
No. 35523
REGISTERED PROFESSIONAL ENGINEER

[Signature]
7-20-16

SHEET TITLE:

LANDSCAPE PLAN

DESIGNED FOR:

248 HIGH STREET, LLC

ADDRESS:

248 HIGH STREET
ACTON, MA

LOT NO.: 1	ASSESSOR MAP: J3	ASSESSOR PARCEL: 7
PL 105 OF 2016		

DAVID E. ROSS ASSOCIATES, INC.

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SCALE: 1"=20'	DATE: JUNE, 2016
REF.: ---	PLAN NO.: L-12984
JOB NO.: 31342	SHEET NO.: 8 of 9

STORM WATER POLLUTION PREVENTION
AND EROSION & SEDIMENTATION CONTROL PLAN

EROSION CONTROL MEASURES:

1. THE CONTRACTOR AND PROPERTY OWNER SHALL BE RESPONSIBLE FOR ENSURING THAT EROSION AND SEDIMENTATION ARE CONTROLLED. THIS PLAN SHALL BE ADAPTED TO FIT THE CONTRACTOR'S EQUIPMENT, WEATHER CONDITIONS, ANY SPECIAL CONDITIONS ISSUED BY THE ACTON ZONING BOARD OF APPEALS.
2. THE MOST IMPORTANT ASPECTS OF CONTROLLING EROSION AND SEDIMENTATION ARE LIMITING THE EXTENT OF DISTURBANCE AND STABILIZING SURFACES AS SOON AS POSSIBLE. OF SECONDARY IMPORTANCE IN EROSION CONTROL IS LIMITING THE SIZE AND LENGTH OF THE TRIBUTARY DRAINAGE AREA TO THE WORK SITE AND DRAINAGE STRUCTURES. THESE FUNDAMENTAL PRINCIPLES SHALL BE THE KEY FACTORS IN THE CONTRACTOR'S CONTROL OF EROSION ON THE SITE.
3. ALL DISTURBED SURFACES SHALL BE STABILIZED A MINIMUM OF 14 DAYS AFTER CONSTRUCTION IN ANY PORTION OF THE SITE HAS CEASED OR IS TEMPORARILY HALTED UNLESS ADDITIONAL CONSTRUCTION IS INTENDED TO BE INITIATED WITHIN 21 DAYS.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF ALL EROSION CONTROL DEVICES ON-SITE. ALL EROSION CONTROL DEVICES SHALL BE REGULARLY INSPECTED. ANY SEDIMENTS REMOVED FROM THE CONTROL DEVICES SHALL BE DISPOSED OF ON THE UPLAND SIDE OF THE EROSION CONTROL LINE.
5. AT NO TIME SHALL SILT-LADEN WATER BE ALLOWED TO ENTER SENSITIVE AREAS (WETLANDS, OFF-SITE AREAS AND DRAINAGE SYSTEMS). ANY RUNOFF FROM DISTURBED SURFACES SHALL BE DIRECTED THROUGH SETTLING BASINS AND EROSION CONTROL BARRIERS PRIOR TO ENTERING ANY SENSITIVE AREAS.

GENERAL CONSTRUCTION REQUIREMENTS:

1. ANY REFUELING OF CONSTRUCTION VEHICLES AND EQUIPMENT SHALL TAKE PLACE OUTSIDE OF ANY 100 FOOT BUFFER ZONE TO ANY WETLANDS.
2. NO ON-SITE DISPOSAL OF SOLID WASTE, INCLUDING BUILDING MATERIALS IS ALLOWED ON SITE.
3. NO MATERIALS SHALL BE DISPOSED OF INTO ANY WETLANDS OR EXISTING OR PROPOSED DRAINAGE SYSTEMS.
4. ALL SITE WORK SHALL BE STABILIZED AT THE END OF THE WORK DAY OR PRIOR TO ANTICIPATED CONDITIONS WHICH COULD CAUSE EROSION OR AIR-BORNE SEDIMENT PROBLEMS (I.E., RAIN, HIGH WINDS, EXPOSED SURFACES OR STEEP SLOPES).
5. SITE OPERATIONS IN THE AREA OF DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER TO MAINTAIN OR CREATE GRADES AND SURFACES WHICH SLOPE AWAY FROM THE STREET.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THAT THE STREET IS KEPT CLEAR OF CONSTRUCTION RELATED DEBRIS. ALL MATERIALS TRACKED INTO THE STREET SHALL BE PROMPTLY REMOVED.

PRE-CONSTRUCTION:

1. A TEMPORARY STONE CONSTRUCTION ENTRANCE SHALL BE INSTALLED TO PREVENT TRACKING OF SILT, MUD, ETC. ONTO THE STREET. THE STONE SHALL BE REPLACED REGULARLY AS WELL AS WHEN THE STONE IS SILT LADEN. THE CONSTRUCTION ENTRANCE SHALL BE LEFT IN PLACE UNTIL THE BINDER PAVEMENT SURFACE IS INSTALLED.
2. EQUIPMENT IS NOT PERMITTED ONTO ADJUTING PROPERTIES UNLESS SPECIFICALLY AUTHORIZED BY THE ADJUTING LANDOWNERS.
3. THE CONTRACTOR SHALL ESTABLISH A STAGING AREA ON A LOT TO BE DISTURBED FOR THE OVERNIGHT STORAGE OF EQUIPMENT AND STOCKPILING OF MATERIALS. NO STORAGE OF GASOLINE, OIL OR OTHER FUEL OR HAZARDOUS MATERIALS IS PERMITTED WITHIN 100' OF THE VERNAL POOL ON THE LAND OF THE TOWN OF ACTON.
4. CONSTRUCTION MATERIALS SHALL BE PILED IN SUCH A MANNER AS NOT TO CONCENTRATE RUNOFF.
5. IN THE STAGING AREA, THE CONTRACTOR SHALL HAVE A STOCKPILE OF MATERIALS REQUIRED TO CONTROL EROSION ON-SITE TO BE USED TO SUPPLEMENT OR REPAIR EROSION CONTROL DEVICES. THESE MATERIALS SHALL INCLUDE, BUT ARE NOT LIMITED TO, HAYBALES, SILT FENCE AND CRUSHED STONE.
6. THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL ON SITE AND SHALL UTILIZE EROSION CONTROL MEASURES WHERE NEEDED, REGARDLESS OF WHETHER THE MEASURES ARE SPECIFIED ON THE PLANS.

PRELIMINARY SITE WORK:

1. MATERIAL REMOVED SHOULD BE STOCKPILED, SEPARATING THE TOPSOIL FOR FUTURE USE ON THE SITE. EROSION CONTROLS SHALL BE UTILIZED ALONG THE DOWNSLOPE SIDE OF THE PILES IF THE PILES ARE TO REMAIN MORE THAN THREE WEEKS.
2. STOCKPILES SHALL BE LOCATED AS NEEDED, WITHIN THE LIMITS OF DISTURBANCE, IN AREAS OF MINIMAL IMPACT. IF A STOCKPILE IS LOCATED ON A SLOPE, THE RUNOFF SHALL BE DIRECTED AWAY FROM THE PILE. STOCKPILES SHALL BE CONTAINED WITHIN HAYBALE DIKES.
3. NO SOIL OR LOAM SHALL LEAVE THE SITE EXCEPT IN ACCORDANCE WITH THE ACTON GENERAL BYLAWS.
4. GRUBBING AND STRIPPING ON SLOPES LEADING TO ANY SENSITIVE AREAS SHALL NOT OCCUR DURING PERIODS OF HEAVY RAIN.
5. IF INTENSE RAINFALL IS ANTICIPATED, THE INSTALLATION OF SUPPLEMENTAL HAYBALE DIKES, SILT FENCES, OR ARMORED DIKES SHALL BE UTILIZED. ADDITIONAL TEMPORARY SETTLING BASINS ARE REQUIRED, LOCATED WITHIN THE DISTURBED AREA, TO MINIMIZE THE TRIBUTARY AREAS.
6. ROUGH GRADING OF THE ROADWAY SHOULD BE CONDUCTED IN SUCH A MANNER AS TO MAINTAIN OR CREATE GRADES SLOPING INTO TEMPORARY DETENTION BASINS WHEREVER POSSIBLE.
7. SIDE SLOPES SHALL NOT EXCEED A SLOPE OF TWO-FOOT HORIZONTAL TO ONE-FOOT VERTICAL.

DRAINAGE SYSTEM:

1. THE DRAINAGE SYSTEM SHALL BE INSTALLED FROM THE DOWNSTREAM END UP. SEDIMENT PIPE INSTALLATION: ALL TRENCHES SHALL BE BACKFILLED AS SOON AS POSSIBLE. THE ENDS OF PIPES SHALL BE CLOSED TIGHTLY WITH PLYWOOD.
4. IF UNSTABLE AREAS ARE ENCOUNTERED ON THE SITE DUE TO NATURAL SPRINGS OR GROUNDWATER BREAKOUT, INTERCEPTOR DRAINS SHALL BE INSTALLED TO DIRECT THE RUNOFF INTO THE DRAINAGE SYSTEM.
5. THE DRAINAGE SYSTEM BASE MATERIAL SHOULD BE PLACED AS SOON AS POSSIBLE AND SHOULD NOT BE DEFERRED TO THE TIME OF PAVING. CAREFUL CONSIDERATION SHOULD BE GIVEN TO RUNOFF PATTERNS DURING THIS PERIOD AND TEMPORARY CONTROL DEVICES SHOULD BE ERECTED OR CONSTRUCTED AS REQUIRED.
6. IMMEDIATELY FOLLOWING PAVING, THE SHOULDERS SHALL BE GRADED, LOAMED AND SEEDED AND MULCHED IF NECESSARY. ALL SURFACES SHOULD BE RAPIDLY AND THOROUGHLY STABILIZED TO THEIR FINAL CONDITION TO AVOID ENTRY OF SEDIMENTS INTO THE DRAINAGE SYSTEM.
7. AT THE COMPLETION OF WORK, THE DRAINAGE SYSTEM SHALL BE INSPECTED. ANY FOREIGN MATERIAL PRESENT SHALL BE REMOVED.

DUST CONTROL:

1. CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL WHICH SHALL INCLUDE STREET SWEEPING OF ALL PAVED SURFACES WITHIN THE SITE AND OFF-SITE AREAS THAT ARE IMPACTED BY SITE CONSTRUCTION ON A REGULAR BASIS, AS NEEDED.
2. ROADWAYS SHALL BE MAINTAINED FREE OF DIRT AND DEBRIS AND SHALL BE SWEEP AS CONDITIONS WARRANT DURING CONSTRUCTION ACTIVITIES.
3. UNSTABILIZED AREAS SHALL BE WATERED AS CONDITIONS WARRANT TO PREVENT AIRBORNE DUST DURING DRY PERIODS.

WATER SUPPLY AND UTILITIES:

1. CARE SHALL BE TAKEN TO ASSURE THAT THE UTILITY TRENCHES DO NOT CHANNELIZE RUNOFF TOWARDS THE SENSITIVE AREAS.
2. TRENCH EXCAVATIONS SHALL BE LIMITED TO THE MINIMUM LENGTH REQUIRED FOR DAILY UTILITY INSTALLATION. ALL TRENCHES SHALL BE BACKFILLED AS SOON AS POSSIBLE.
3. WHEN EXCAVATING EACH WATER LINE, TRENCH EXCAVATION SHOULD BEGIN AT THE LOW END AND PROCEED UPHILL.
4. THE INSTALLATION OF THE WATER MAIN, HYDRANT, SERVICE, FITTINGS, AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE ACTON WATER DISTRICT SPECIFICATIONS.

LANDSCAPING:

1. LANDSCAPING SHALL OCCUR AS SOON AS POSSIBLE TO PROVIDE PERMANENT STABILIZATION OF DISTURBED SURFACES.
2. CONTRACTOR SHALL UTILIZE A VARIETY OF SLOPE STABILIZATION METHODS AND MATERIALS, WHICH SHALL BE ADJUSTED TO THE SITE CONDITIONS. EROSION CONTROL BLANKETS OR MIRAFI MIRAMAT (OR SIMILAR PRODUCTS) SHALL BE AVAILABLE ON SITE.
3. IF THE SEASON OR ADVERSE WEATHER CONDITIONS DO NOT ALLOW THE ESTABLISHMENT OF VEGETATION, TEMPORARY MULCHING WITH HAY, TACKIFIED WOOD CHIPS OR OTHER METHODS SHALL BE PROVIDED.
4. A MINIMUM OF 4" TOPSOIL SHALL BE PLACED AND ITS SURFACE SMOOTHED TO THE SPECIFIED GRADES.
5. SEED APPLICATIONS SHALL BE IN ACCORDANCE WITH THE GRASS AND SLOPE COVER SPECIFICATIONS.
6. TO ENSURE A DENSE, SUCCESSION GROWTH, SEED MIXTURE TYPE "C" IS REQUIRED ON ALL DISTURBED SURFACES, EXCEPT WHERE LAWN AREA IS PROPOSED.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SUFFICIENT WATER AND/OR IRRIGATION FOR A MINIMUM OF TWO WEEKS FROM THE DATE OF PLANTING OF TREES AND AS REQUIRED TO OBTAIN THE MINIMUM STANDARDS FOR LAWN SURFACE STABILIZATION. SEE GRASS AND SLOPE COVER SPECIFICATIONS.

GRASS AND SLOPE COVER SPECIFICATIONS

1. ALL DISTURBED AREAS, INCLUDING SLOPES AND THE RETENTION AREAS, SHALL BE GRADED AND STABILIZED BY PLANTING OR OTHER METHOD AS SHOWN OR SPECIFIED ON THE PLANS.
2. A MINIMUM OF 4" OF LOAM SHALL BE APPLIED TO ALL SURFACES TO BE SEEDED. LOAM SHALL BE UNIFORMLY APPLIED, SHARDED AND SMOOTHED.
3. LOAM ACIDITY SHALL BE CHECKED AND ADJUSTED TO A PH OF 6.5. APPLY LIME AT A MINIMUM RATE OF 50 LBS. PER 1,000 SQUARE FEET, IF NECESSARY (IF PERMITTED BY THE ORDERS OF CONDITIONS ONLY).
4. ORGANIC-SLOW RELEASE FERTILIZER OF A TYPE 5-2-2 APPLIED AT A RATE OF 50 LBS. PER 500 SQUARE FEET (IF PERMITTED BY THE ORDERS OF CONDITIONS ONLY, IF APPLICABLE).
5. RAKE A SEED BED USING A YORK RAKE OR HAND RAKING TO A MINIMUM DEPTH OF 3" THOROUGHLY INCORPORATING LIME AND FERTILIZER.
6. SEEDING MAY BE PERFORMED BY HAND, OR BY MECHANICAL OR TRACTOR MOUNTED SPREADER. HYDROSEEDING IS RECOMMENDED.
7. AREAS SEEDED BEFORE APRIL 15 OR AFTER NOVEMBER 1 SHALL BE REAPPLIED BETWEEN THE AFOREMENTIONED DATES IF A MINIMUM GERMINATION OF 90 % COVERAGE, HAS NOT OCCURRED OR IF THE SURFACE AREA HAS ERODED OR BECOME UN-STABILIZED.

8. SEEDING:

- A. HAND SEEDING:
 1. SEED SHALL BE APPLIED BY HAND OR BY BROADCAST SPREADER, TO PROVIDE A UNIFORM DISTRIBUTION OF SEED.
 2. SEED SHALL BE LIGHTLY RAKED INTO A DEPTH OF 1/2" - 1", WITH ALL RAKING TO BE PERPENDICULAR TO THE SLOPE.
 3. SEED IS TO BE ROLLED WITH A WATER BALLAST ROLLER TO ENSURE CONTACT OF SEED WITH SOIL. DO NOT COMPACT SOIL.
 4. AREA SHALL BE MULCHED USING SEED-FREE STRAW TO ADEQUATELY COVER THE AREA TO A DEPTH OF 1/2" - 1", ENSURING A UNIFORM COVER OF 75 % OF THE SURFACE AREA.
 5. MULCH SHALL BE SECURED BY MEANS OF SECURED LANDSCAPE FABRIC, EROSION CONTROL NETTING (3/4" - 1" MESH), OR OTHER BIODEGRADABLE MATERIAL WHICH WILL ENSURE ADEQUATE COVER UNTIL THE SURFACE HAS GROWN TO 90 % GERMINATION, OR ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
- B. HYDROSEEDING:
 1. HYDROSEEDING IS ENCOURAGED FOR ALL AREAS, ESPECIALLY FOR LARGE AREAS AND STEEP SLOPES.
 2. HYDROSEEDING SHALL BE PERFORMED IN A SINGLE UNIFORM LAYER.
 3. A TRACK EQUIPPED MACHINE SHALL TRAVEL PERPENDICULAR TO ANY SLOPE TO PROVIDE COMPACTED SURFACE DEPRESSIONS FOR HYDROSEEDING TO CATCH. SUCH TRACKS SHALL BE A MINIMUM OF THREE (3') FEET ON CENTER FOR THE TOTAL LENGTH OF THE SLOPE.
 4. APPLICATION RATES ON SLOPES GREATER THAN 3:1 (HORIZONTAL TO VERTICAL) SHALL HAVE A MINIMUM SEEDING RATE OF 4 LBS. / 1000 S.F.
 5. A LATEX OR FIBER TACKIFIER SHALL BE USED ON ALL AREAS AT THE RATE RECOMMENDED BY THE MANUFACTURER AND ON ALL SLOPES IDENTIFIED ABOVE (NO. 4). A MINIMUM RATE OF 50 LBS. OF TACKIFIER PER 500 GALS. OF WATER SHALL BE USED.
 6. FERTILIZER AND LIME MAY BE INCORPORATED INTO THE HYDROSEED MIXTURE IN THE QUANTITIES AND TYPE IDENTIFIED PREVIOUSLY (IF PERMITTED BY THE ORDERS OF CONDITIONS ONLY).
9. SEED MIXTURE:
 - A. SEED MIXTURE TYPE "C": SEED MIXTURES FOR SLOPED AREAS SHALL CONSIST OF A STANDARD CONSERVATION MIX CONFORMING TO THE RECOMMENDATIONS OF THE U.S. NATURAL RESOURCES SERVICES GUIDELINES (FORMERLY THE SOIL CONSERVATION SERVICE, S.C.S.) AND SHALL CONFORM TO THE FOLLOWING STANDARDS:
MINIMUMS (BY TOTAL WEIGHT OF MIX):
20 % ANNUAL RYE
15 % RED TOP FESCUE
10 % WHITE CLOVER
5 % LADINA CLOVER
5 % CROWN VETCH
NO MORE THAN 40% OF THE TOTAL MIX, BY WEIGHT, SHALL CONSIST OF ANNUAL RYE OR OTHER ANNUAL SPECIES. APPLY AT A RATE OF 4 LBS. PER 1,000 SQUARE FEET.
 - B. ALL SEED SHALL BE OF THE PREVIOUS YEAR'S CROP AND SHALL HAVE A QUANTIFIED MIXTURE ANALYSIS ATTACHED. NO MORE THAN 10% OF TOTAL MIXTURE SHALL CONSIST OF WEED SEED SPECIES.

DRAINAGE SYSTEM OPERATIONS & MAINTENANCE PLAN

STORMWATER COLLECTION SYSTEM:

THE STORMWATER COLLECTION SYSTEM SERVING THIS SITE IS INTENDED TO BOTH COLLECT STORMWATER RUNOFF AND TO PROVIDE TREATMENT OF THE STORMWATER. THE STORMWATER COLLECTION SYSTEM HAS BEEN DESIGNED ON THE 100-YEAR STORM EVENT. THE PROPOSED STORMWATER COLLECTION SYSTEM COLLECTS RUNOFF GENERATED FROM THE SITE THROUGH THE USE OF CATCH BASINS, TREATMENT UNIT, AND SUBSURFACE DETENTION SYSTEM. RUNOFF FROM IMPERVIOUS SURFACES IS DIRECTED TO UNDERGROUND DETENTION CHAMBER SYSTEM. THIS PROMOTES IMMEDIATE TREATMENT, MORE EVENLY DISTRIBUTED INFILTRATION, AND AN AESTHETICALLY MORE ATTRACTIVE SITE. EACH PROPOSED CATCH BASIN IS EQUIPPED WITH A FOUR (4") FOOT DEEP SUMP TO COLLECT SEDIMENTS AND DEBRIS, AND AN OIL/GAS TRAP TO PREVENT THE INTRUSION OF HYDROCARBONS AND OTHER FLOATING MATERIALS FROM ENTERING THE DRAINAGE SYSTEM. ADDITIONAL TREATMENT IS PROVIDED BY A PROPRIETARY STORMWATER TREATMENT UNIT. WHEN THESE CONTROL MECHANISMS ARE FUNCTIONING PROPERLY, THEY PROVIDE FOR A REDUCTION OF CONTAMINANTS AND DEBRIS ENTERING THE STORMWATER COLLECTION AND RECHARGE SYSTEMS.

STORMWATER RUNOFF IS TO BE DIRECTED TO THE PROPOSED UNDERGROUND DETENTION CHAMBER SYSTEM THAT WILL COLLECT, RECHARGE AND ATTENUATE GENERATED RUNOFF.

THE ABOVE-DESCRIBED SYSTEMS RELY UPON PROPER MONITORING, OPERATIONS AND MAINTENANCE TO FUNCTION AS DESIGNED AND INTENDED. THE ACTIVITIES DESCRIBED BELOW ARE TO BE IMPLEMENTED AT THE BEGINNING, DURING, AND AFTER CONSTRUCTION OF THE PROJECT AS APPROPRIATE.

MONITORING AND OPERATION:

1. THE DRAINAGE SYSTEM IS REQUIRED TO BE MONITORED BY THE OWNER, WHO SHALL DIRECT AN INDIVIDUAL ENTITY TO ACT AS THE PROJECT SITE MANAGER.
2. THE CATCH BASINS AND TREATMENT UNIT SHALL BE INSPECTED ON A REGULAR BASIS TO ENSURE THAT THEY ARE WATERTIGHT (HOLDING WATER), THAT THEY HAVE ADEQUATE SUMP CAPACITY, THAT OIL/GAS TRAPS ARE IN PLACE, AND THAT GRATES AND FRAMES ARE FREE FROM STRUCTURAL DAMAGE AND ARE DRAINING FREELY.
3. LONG TERM SNOW STORAGE WILL BE AS SHOWN. ANY NECESSARY REMOVAL AND DISPOSAL OF SNOW FROM THE FACILITY SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL ORDINANCES, RULES, REGULATIONS, AND LAWS.
4. THE CATCH BASINS, TREATMENT UNIT, AND UNDERGROUND DETENTION CHAMBER SYSTEM SHALL BE INSPECTED ON A REGULAR BASIS TO ENSURE THAT NO DEBRIS IS OBSTRUCTING, THAT ALL INLETS ARE FREE-FLOWING, AND THAT NO DAMAGE HAS OCCURRED AS PART OF SITE MAINTENANCE OR ACTIVITIES.

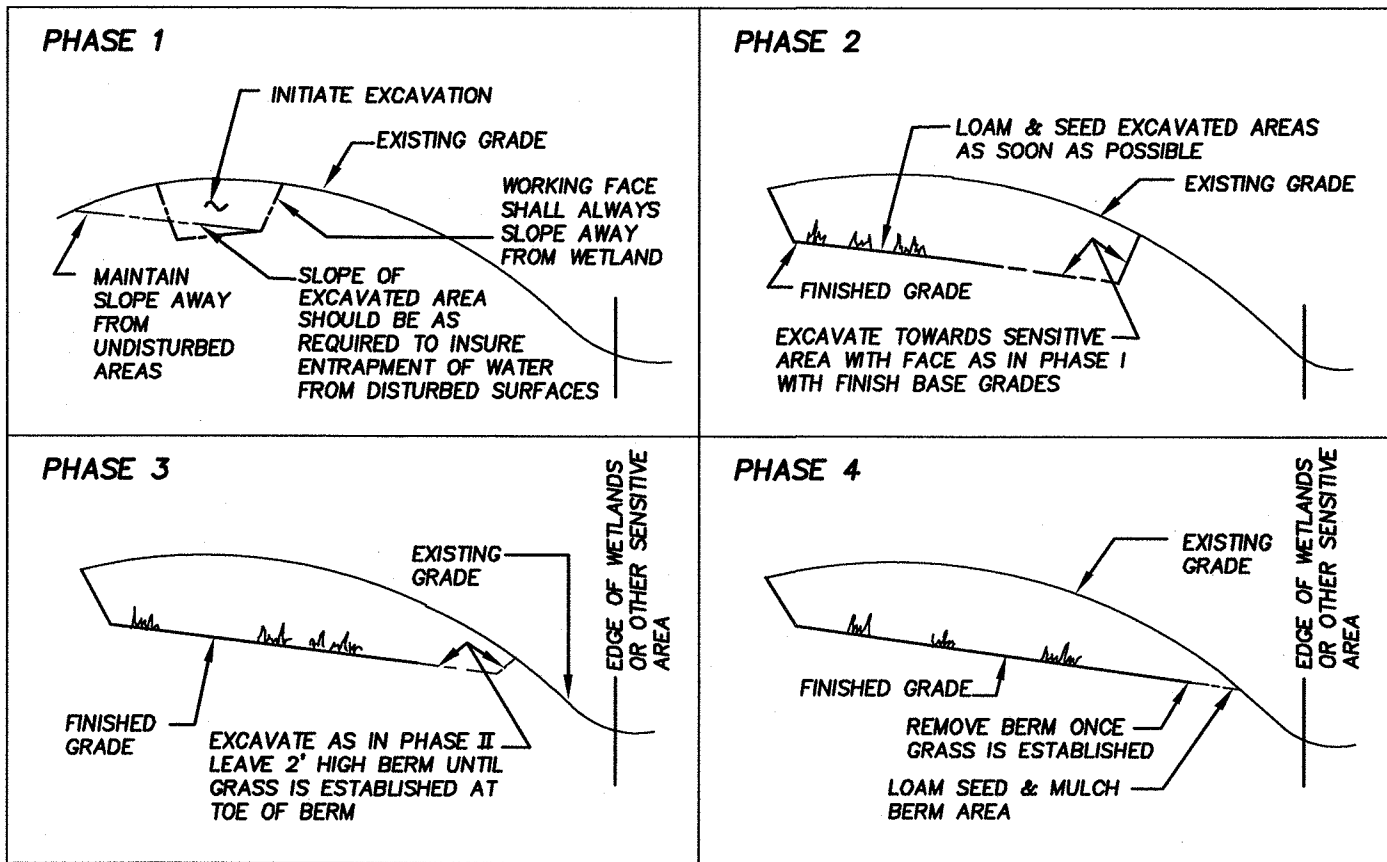
OPERATIONS:

1. ALL MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER. THERE SHALL BE NO OUTDOOR STORAGE OF HAZARDOUS MATERIAL, PETROLEUM PRODUCTS, FERTILIZERS, PESTICIDES, OR DE-ICING AGENTS.
2. PETROLEUM PRODUCTS:
 - A. ONSITE VEHICLES AND PARKING AREAS SHALL BE REGULARLY MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO PREVENT LEAKAGE.
 - B. PETROLEUM PRODUCTS SHALL BE STORED UNDER COVER AND SHALL BE IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED.
3. FERTILIZERS:
 - A. FERTILIZERS SHALL ONLY BE USED IN THE MINIMUM AMOUNTS AS RECOMMENDED BY THE MANUFACTURER.
 - B. THE CONTENTS OF ANY UNUSED FERTILIZER SHALL BE TRANSFERRED TO A CLEARLY LABELED, SEALABLE PLASTIC BIN, TO AVOID SPILLAGE.
4. SPILLS OF TOXIC OR HAZARDOUS MATERIAL OR NATURE WILL BE REPORTED TO THE APPROPRIATE STATE, LOCAL OR FEDERAL AGENCY, AS REQUIRED BY LAW.
5. THE USE OF SODIUM CHLORIDE FOR ICE CONTROL SHALL BE MINIMIZED CONSISTENT WITH PUBLIC HIGHWAY SAFETY REQUIREMENTS.

MAINTENANCE:

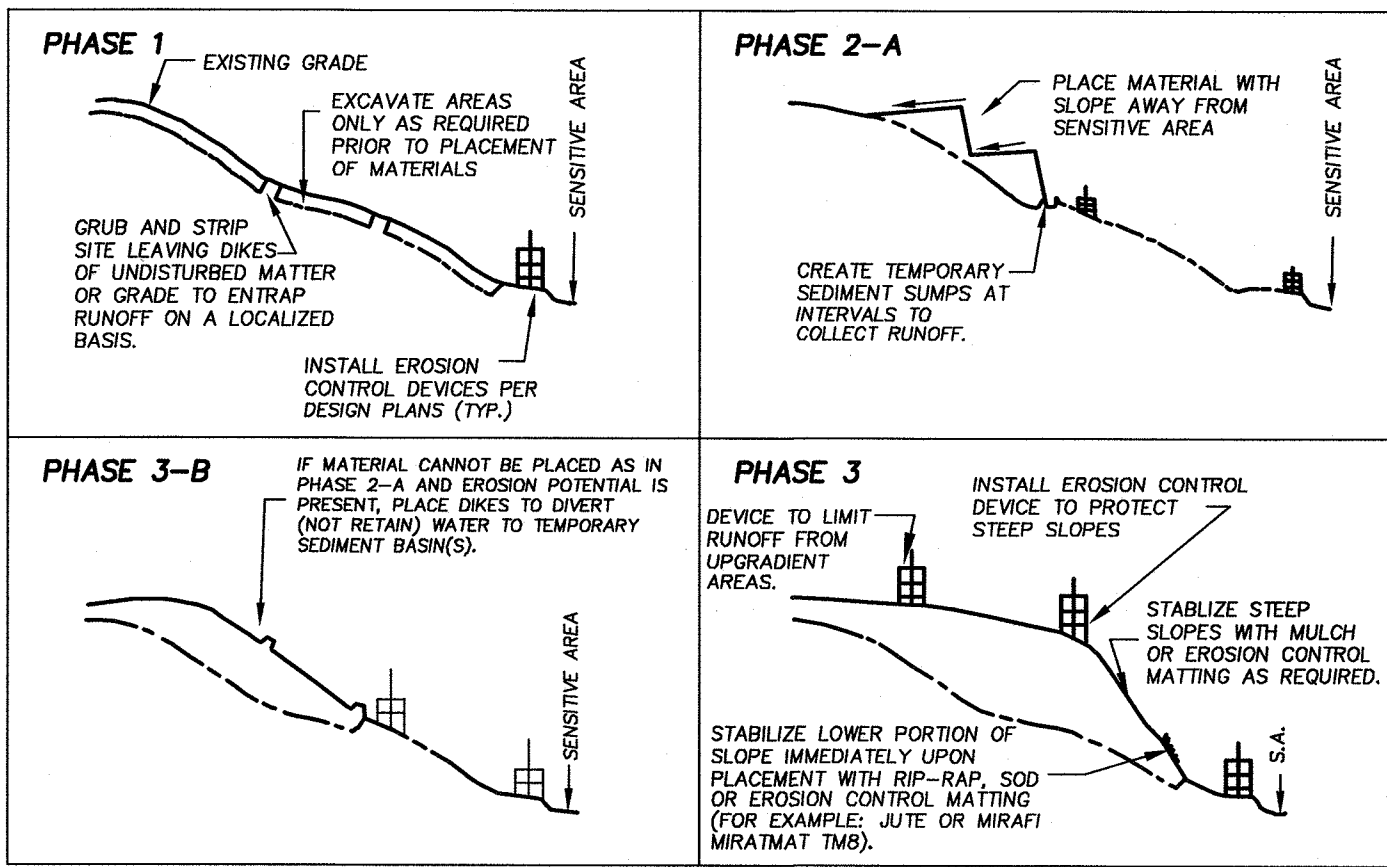
THE APPLICANT SHALL COMPLY WITH THE FOLLOWING MAINTENANCE SCHEDULE:

1. MONTHLY INSPECTION FOR DAMAGED OR CLOGGED CATCH BASIN GRATES.
 2. ANNUAL VISUAL INSPECTION OF UNDERGROUND INFILTRATION CHAMBER SYSTEM FOR SIGNS OF STANDING WATER OR SEDIMENTATION OF CRUSHED STONE BEDDING.
 3. BIENNIAL SWEEPING OF THE PARKING LOTS.
 4. BIENNIAL CLEANING OF THE CATCH BASINS AND OIL/GRIT SEPARATORS.
- IN ADDITION:
1. STREET, DRIVEWAYS AND GUTTERS SHALL BE SWEEPED CLEAN OF DEBRIS AND ACCUMULATION ON A REGULAR BASIS. AT A MINIMUM, A SPRING AND FALL CLEANING SCHEDULE IS RECOMMENDED.
 2. THE CATCH BASINS SHALL HAVE THE SUMPS CLEANED AT ANY TIME OF THE YEAR WHEN 2 FT. OR LESS SPACE EXISTS BELOW THE OUTLET INVERT, OR A MINIMUM OF ONCE PER YEAR, REGARDLESS OF SUMP ACCUMULATION. ALL DEBRIS FROM THE CLEANING SHALL BE DISPOSED OF OFFSITE AND IN A MANNER AS PRESCRIBED BY LAW.
 3. ALL OIL & GREASE TRAPS SHALL BE CHECKED FOR PHYSICAL INTEGRITY AND WATERTIGHT SEALS IMMEDIATELY AFTER EACH CATCH BASIN INLET CLEANING.
 4. OIL ABSORBING PILLOWS OR OTHER MEANS SHALL BE USED TO REMOVE ACCUMULATIONS OF HYDROCARBONS (OIL / GREASE) IN CATCH BASINS AND WATER QUALITY INLETS THAT ARE REGULARLY OBSERVED TO CONTAIN HYDROCARBONS WHICH DO NOT EVAPORATE BETWEEN INSPECTIONS.
 5. ALL BROKEN, LEAKING OR OTHERWISE DAMAGED STRUCTURES SHALL BE REPAIRED PROMPTLY UPON DISCOVERY.
 6. UNDERGROUND DETENTION SYSTEM SHALL BE MONITORED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SUGGESTED OPERATION AND MAINTENANCE GUIDELINES.



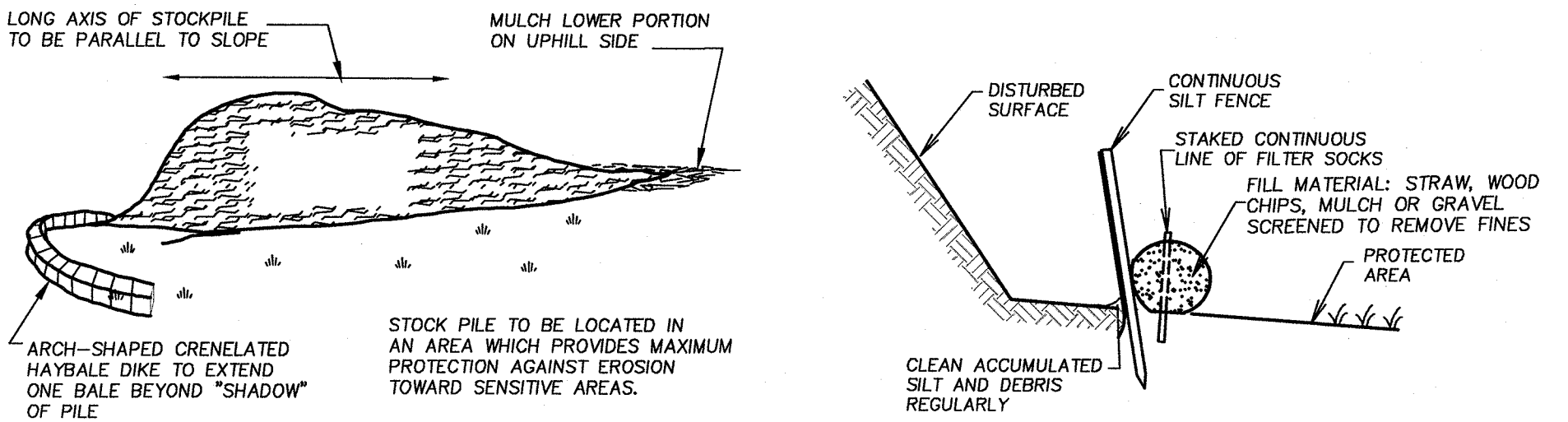
EXCAVATION SEQUENCE

NOT TO SCALE



FILL SEQUENCE

NOT TO SCALE

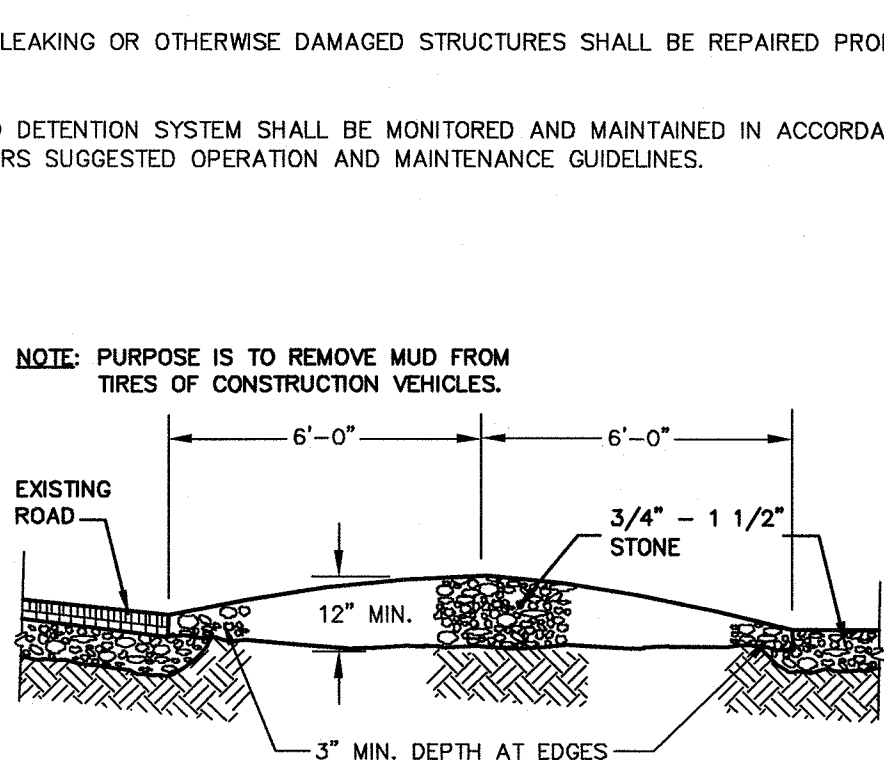


TEMPORARY STOCKPILE

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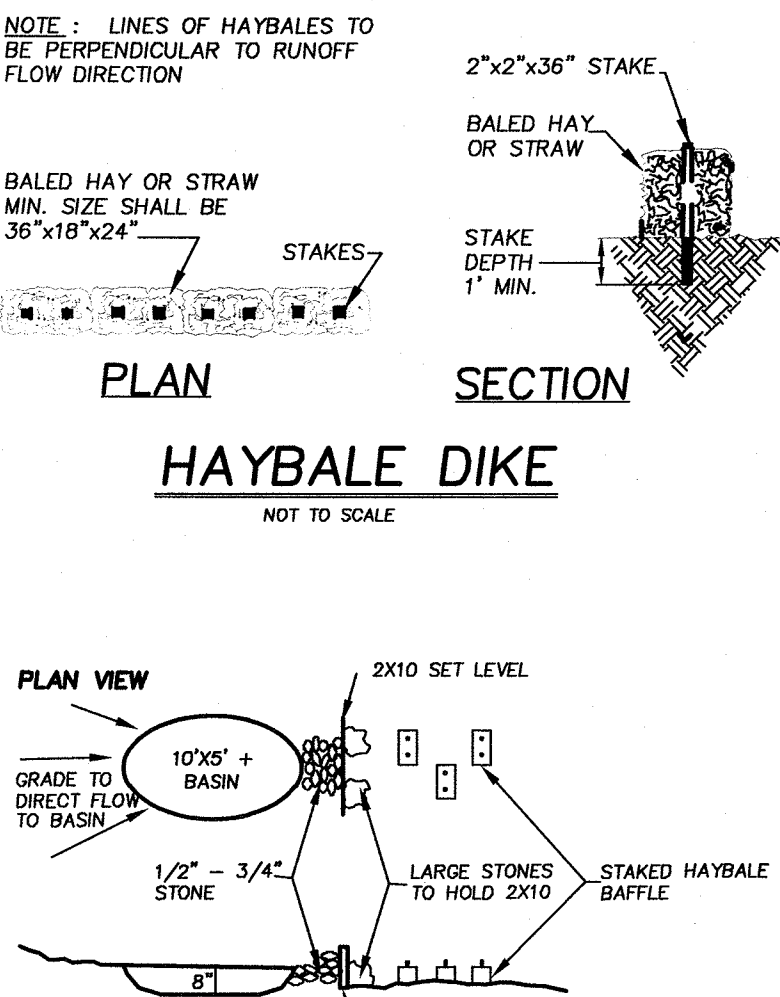
EROSION CONTROL BARRIER

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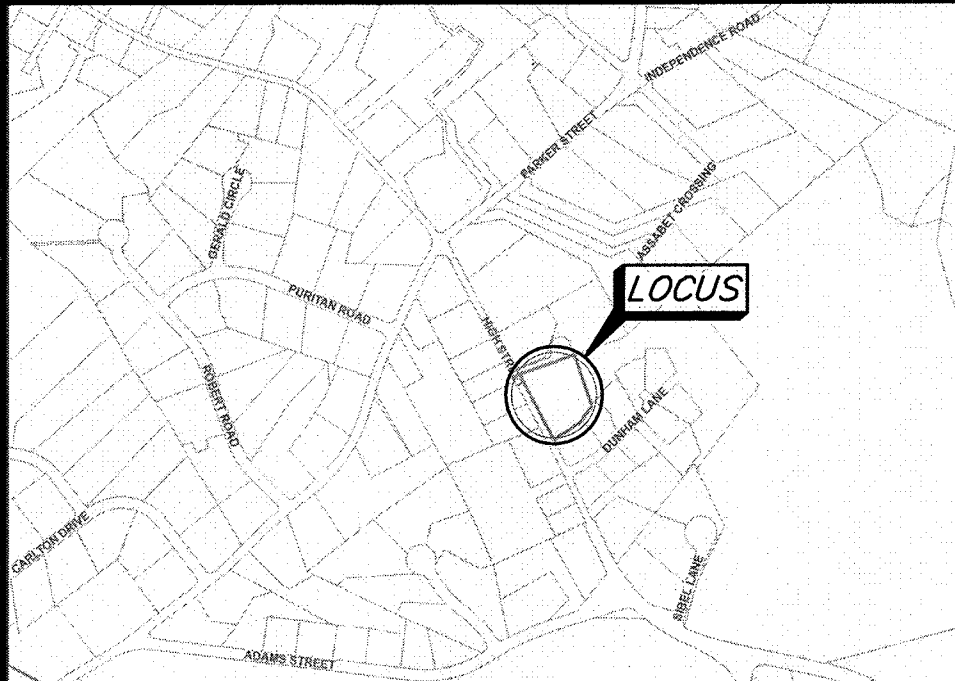
FILTERED CATCHBASIN INLET

NOT TO SCALE



TEMPORARY DEWATERING AREA

NOT TO SCALE



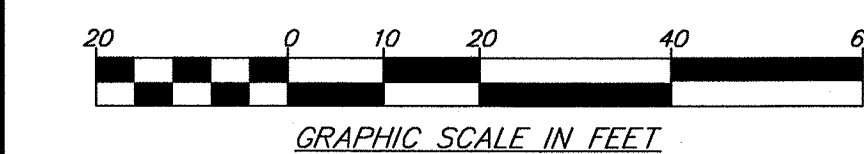
LOCUS MAP
NOT TO SCALE

ACTON ZONING BOARD OF APPEALS

DATE OF APPROVAL:

DATE OF ENDORSEMENT:

APPROVAL UNDER M.G.L. CH. 40B, SEC. 20-23



SURV:	MSB/ORB	CALC.:	MKW	DRAFT:	REO
NO:	766/95, 722Y/101	DEED:	66792-231	CHECK:	DBW

REVISIONS	
6-7-16	ORIGINAL ENDORSEMENT
7-20-16	NO REVISIONS THIS SHEET
APPROVAL SIGNATURE	
DANIEL E. ROSS REGISTERED PROFESSIONAL ENGINEER No. 10333 CIVIL 7-20-16	

SHEET TITLE:
EROSION & SEDIMENTATION
CONTROL PLAN

DESIGNED FOR:
248 HIGH STREET, LLC

ADDRESS:
248 HIGH STREET
ACTON, MA

LOT NO.:	ASSESSOR MAP:	ASSESSOR PARCEL:
1 PL 105 OF 2016	J3	7

DAVID E. ROSS
ASSOCIATES, INC.

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978-772-6232
FAX 978-772-6258
www.davidross.com

SCALE:	1"=20'	DATE:	JUNE, 2016
REF.:	---	PLAN NO.:	L-12984
JOB NO.:	31342	SHEET NO.:	9 of 9